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ICONES PLEUROTHALLIDINARUM
VII

SYSTEMATICS
OF
PLATYSTELE
(ORCHIDACEAE)

Missouri Botanical Garden

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Missouri Botanical Garden

MONOGRAPHS IN SYSTEMATIC BOTANY
from the Missouri Botanical Garden
Volume 38, December 1990

ISSN 0161-1542

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Typeset at 3222 Old Oak Drive, Sarasota, Florida
with WordStar 5.5
and a Hewlett Packard Laserjet Series II
using HP 33412AD and 33412AF

Printed in the United States of America by
Arcade Lithographing Corp., Bradenton, FL.

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Platystele densiflora P. Ortiz, a species from Colombia and cultivated by Dr. Moises Behar in Guatemala. Photograph by Dr. Behar.

SYSTEMATICS OF THE GENUS *PLATYSTELE* (ORCHIDACEAE)

ABSTRACT

The genus *Platystele* Schltr. is described, and a key to the subgenera and species is given. Each species is described and illustrated with a black and white drawing. Types and representative specimens are listed in the distribution, followed by a brief discussion of each species.

New taxa:
Platystele acicularis Luer & Hirtz, sp. nov.
Platystele argentosa Luer & Escobar, sp. nov.
Platystele consobrina Luer, sp. nov.
Platystele crinita Luer & Hirtz, sp. nov.
Platystele filamentosa Luer, sp. nov.
Platystele fimbriata Luer & Hirtz, sp. nov.
Platystele lycopodioides Luer & Hirtz, sp. nov.
Platystele muscicola Luer & Hirtz, sp. nov.
Platystele myoxura Luer & Hirtz, sp. nov.
Platystele ortiziana Luer & Escobar, sp. nov.
Platystele posadarum Luer & Escobar, sp. nov.
Platystele pyriformis Luer, sp. nov.
Platystele resimula Luer & Hirtz, sp. nov.
Platystele rhinocera Luer, sp. nov.
Platystele stonyx Luer, sp. nov.
Platystele vetulus Luer & Hirtz, sp. nov.
Platystele zeus Luer & Hirtz, sp. nov.

This genus was first recognized as being distinct among the pleurothallids by A. R. Endres. In a note written in English in 1869 to Professor Reichenbach accompanying his illustration of a plant that would eventually be described by Schlechter (*Platystele minimiflora*), Endres surmises that it is "the smallest species of this new genus." Endres had illustrated other Costa Rican species of *Platystele*, but an illustration of the most common species (*P. oxyglossa*) is not present. Reichenbach paid no heed.

When Rudolf Schlechter described *Platystele bulbinella* in 1910, he also proposed the genus, basing it upon the very short column, dilated above and footless below. He mentions the small, caespitose habit with short, leaf-bearing stems (ramicauls), and the slender, subdense raceme of very small flowers. He recognized its close relationship with the genus *Pleurothallis* R. Br., but did not acknowledge any of the other closely allied, previously described species in *Pleurothallis* now attributable to *Platystele*.

The first species of *Platystele* to be described was the relatively common, variable, and widely distributed species described by Reichenbach in 1844 as *Pleurothallis stenostachya* from a Mexican collection by Leibold. The following year the same species, also from Mexico, was described by Richard and Galeotti as *Pleurothallis dubia*.

During the years prior to 1910, six other species of *Platystele* were described in *Pleurothallis*: *P. perpusilla* Reichb. f., *P. misera* Lindley, *P. pisifera* Lindley, *P. johnstonii* Ames, *P. repens* Ames, and Schlechter's own *P. microtatantha*. Three other species of *Platystele* were described in *Stelis* Sw.: *S. ovalifolia* Focke, *S. lancilabris* Reichb. f., and *S. compacta* Ames.

During the years following 1910, Schlechter described five more species of *Platystele*, attributing them all to *Pleurothallis*: *P. jungermannioides, P. minimiflora, P. oxyglossa, P. pedicellaris* and *P. schulzeana*. Either he failed to recognize them as species of his *Platystele*, or he had decided that *Platystele* was synonymous with *Pleurothallis*.

In 1922, Ames transferred his *Stelis compacta* to *Platystele*. The following year Schlechter transferred Reichenbach's *Stelis lancilabris* to *Platystele*, but he failed to recognize any of the others, even the similarity of his own *Pleurothallis oxyglossa* to *Platystele lancilabris*. The meager total number of species recognized in the genus then stood at three, Schlechter's *P. bulbinella* and Ames' earlier *P. compacta* being the same species. Schlechter added a fourth species to the genus in 1924 when he described the frequent and widely distributed *P. schmidtchenii* from the Andes.

In 1930, Ames decided that the criteria for maintaining *Platystele* were insufficient when he transferred his *S. compacta* from *Platystele* to *Pleurothallis*. Although the criteria may have seemed minor to Ames, as well as to some other authors (e.g. Correll, C. Schweinfurth, L. O. Williams) who reduced *Platystele* to *Pleurothallis*, the species form a homogeneous unit (except for a few species segregated into subgenus *Teagueia*), and they are easily recognized. The only problem is consistency. The recognition of *Platystele* suggests the recognition of most of the subgenera of *Pleurothallis* at the generic level.

Vegetatively the species of *Platystele* are small to extremely small and usually caespitose, but sometimes repent. The smallest known orchid is reported to be *P. jungermannioides*, but a few other species of *Platystele* have even smaller flowers with sepals less than one millimeter in length. The species of *Platystele* are characterized by ramicauls shorter than the leaves, and a lateral, racemose inflorescence that emerges with an annulus a variable distance below the abscission layer. Many sterile plants of *Platystele* are indistinguishable from each other or from some of those of several other pleurothallid genera such as *Dryadella* Luer, *Masdevallia* Ruiz & Pav., *Ophidion* Luer, *Pleurothallis* R. Br. subgen. *Specklinia*, *Scaphosepalum* Pfitz., *Stelis* Sw., or *Trisetella* Luer.

Individually, the flowers of *Platystele* are very similar to, if not indistinguishable from those of *Lepanthopsis* (Cogn.) Ames. The habit, however, with elongated ramicauls clad in lepanthiform sheaths, immediately distinguishes the latter. Subgenus *Teaguei* could possibly represent an intermediate taxon. The transverse, bilobed, apical stigma is common to both genera, as well as to *Brachionidium* Lindley, *Pleurothallis* subgenus *Pleurothallis*, most species of *Stelis*, and even few species of *Lepanthes* Sw. and *Octomeria* R. Br.

Although most are very small, the flowers of *Platystele* are usually widely spread. The sepals are free, only the laterals sometimes connate to each other near the base. The size of the sepals and petals is commonly variable within a given species, the dimensions often varying two or three millimeters, which can be more than 100% in tiny flowers (twice the dimensions or four times the size!), as seen in *P. examen-culicum, P. oxyglossa* and *P. pedicellaris*.

The lip of a given species is more constant in size. It is usually simple and more or less cellular-glandular. The base, with or without a glenion, is usually firmly fixed to the rudimentary column-foot. The column itself is short and

more or less flattened or membranous forming a broad hood over an apical anther flanked by the receptive stigmatic lobes of the transverse, bilobed stigma.

In common with most other pleurothallids, crystalline deposits in varying quantities are often seen within the floral parts preserved in liquid. An unusually large amount of the crystals is seen in the flowers and also in the leaves of *P. argentosa* Luer & Escobar. Similar crystals in a *Stelis* have been identified as calcium oxalate hydrate (Chase and Peacor, 1987).

By 1974, the total number of epithets attributed to *Platystele* had reached 28 encompassing 22 species. Currently the total number of known species is 73. They are distributed in the moist, neotropical forests from southern Mexico to southern Brazil, most commonly at moderately high altitudes (1500 to 2500 meters above sea level) where other genera of the Pleurothallidinae also are abundant. The greatest concentration of species occurs in the Andes of Colombia and Ecuador. One species is known from Cuba, but none is known from the Lesser Antilles except for *Platystele johnstonii* from the Isla de Margarita off the coast of Venezuela.

Before the forests are gone, more species and range extensions will eventually be discovered, especially in Peru which has been largely unexplored for the insignificant pleurothallids.

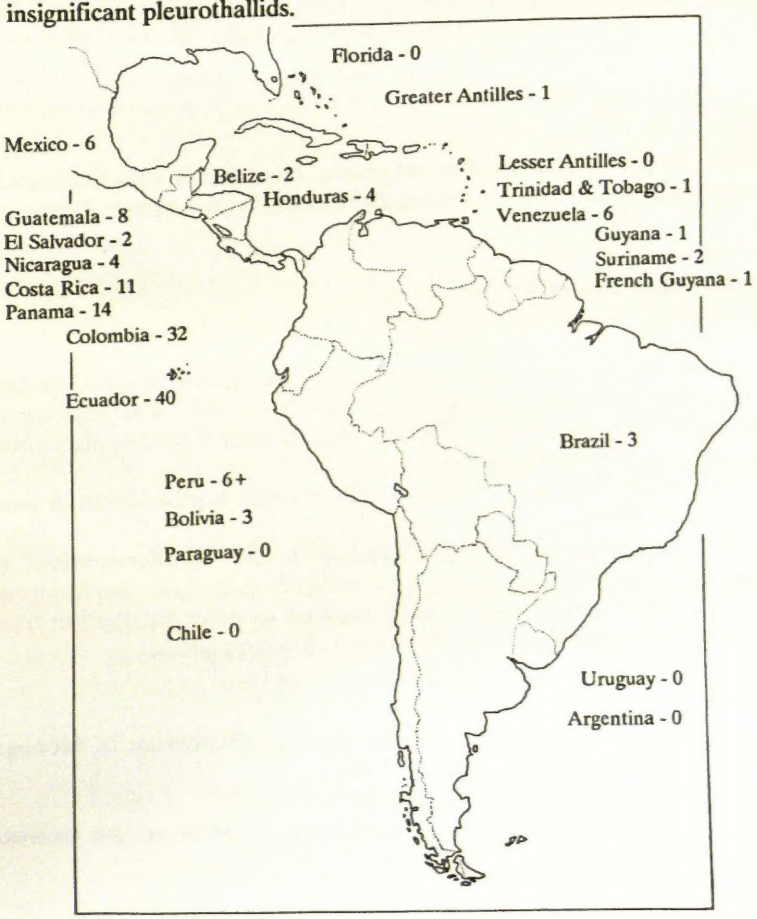

Figure 1. Distribution: numbers of species of *Platystele* recorded for countries.

Platystele Schltr., Repert. Spec. Nov. Regni Veg. 8: 565, 1910.

Type: *Platystele bulbinella* Schltr., Repert. Spec. Nov. Regni Veg. 8: 565, 1910. (=*Stelis compacta* Ames, Orchidaceae 3: 76, t. 53, 1908) [=*Platystele compacta* (Ames) Ames, Proc. Biol. Soc. Wash. 35: 85, 1922]

Ety.: From the Greek *platystele*, "a broad column," referring to the broad, membranous, cucullate column of the species.

Plants perennial, very small to medium in size, epiphytic to terrestrial or lithophytic, the rhizome extremely short to elongate between aerial stems (ramicauls); roots few to many, slender, sometimes fleshy. Ramicauls ascending to erect, slender, nonpseudobulbous, shorter than the leaf, unifoliate, partially or completely enclosed by 2-3 thin, ribbed, imbricating sheaths about the base, the inflorescence emerging laterally with an annulus from near the apex, or abscission layer, near the middle, or near the base. **Leaf** erect, thinly to thickly coriaceous, smooth, sometimes suffused with purple, usually more or less petiolate, the blade, elliptical or narrowly elliptical to narrowly obovate, the apex acute to obtuse, notched with an apiculum in the sinus. the base cuneate or narrowly cuneate into the petiole. **Inflorescence** racemose, shorter or longer than the leaf, densely flowered to laxly flowered, successively to simultaneously few- to many-flowered, with the flowers resupinate, borne by an erect to ascending, slender, glabrous peduncle, often with a few bracts; floral bracts thin, tubular, pedicels slender, ovary smooth to costate; **sepals** membranous, variously colored, more or less ovate, 1- or 3-veined (rarely veinless), often subcarinate, entire, glabrous to pubescent, sometimes ciliate, the dorsal sepal essentially free, the lateral sepals free to partially connate, all usually widely spread to form a more or less flat flower, the apices sometimes contracted into slender tails; **petals** membranous, entire, glabrous to pubescent, sometimes ciliate; **lip** more or less fleshy, ovate to cordate, acute, acuminate, obtuse or rounded, glabrous to pubescent, sometimes with a glenion at the base, the base more or less truncate, more or less inflexibly attached of fixed to the apex of the column-foot; **column** short, more or less membranous, broadly winged or cucullate, the anther and rostellum apical, the pollinia 2, pyriform, free or attached to a common viscidium, the stigma apical or subapical, transverse to transversely bilobed, the lobes usually presenting to either side of the anther, the base of the column broad, developed into a rudimentary, pedestal-like column-foot with the apex of the ovary.

The genus is divided into two subgenera, four species being segregated into subgenus *Teagueia*. The remaining species constitute subgenus *Platystele*.

Platystele subgen. **Platystele**

Type: *Platystele bulbinella* Schltr.

All the species of this subgenus (the whole of the genus save for the four species treated in subgenus *Teaguei*) are closely related. The creation of sections seems impractical. The characteristics of several species place them in more than one division of the key.

The sepals and petals are one-veined. The midvein may be absent in some extremely small flowers.

Platystele oxyglossa is the "super species," or the "mother-species," to which many of the species seem closely interrelated. It is of the simplest form, yet with numerous minor variations throughout its wide distribution from Mexico into Brazil, which is essentially that for the entire genus.

Platystele subgen. **Teagueia** Luer, Icones Pleurothallidinarum II, Monogr. Syst. Bot. Missouri Bot. Gard. 16: 45, 1986.

Type: *Platystele teaguei* Luer, Selbyana 5: 157, 1979.
Ety.: Named in honor of Walter Teague of San Francisco, California, who first discovered the type-species.

This subgenus is characterized by comparatively large flowers with sepaline tails. Three of the species bear the flowers more or less simultaneously in a long, strict raceme suggestive of *Lepanthopsis*. The dorsal sepals are three-veined, the laterals, at least two-veined. The lips are concave or channeled centrally below the apex and cordate at the base with the lobes surrounding the abbreviated column. The column with an apical anther and rostellum and a bilobed stigma are compatible with both *Platystele* and *Lepanthopsis*. If it were not for the absence of lepanthiform sheaths of the ramicauls, these species might be classified in *Lepanthopsis*.

The four known species that constitute this subgenus are rare and distributed locally from the Central Cordillera of Colombia to central Ecuador.

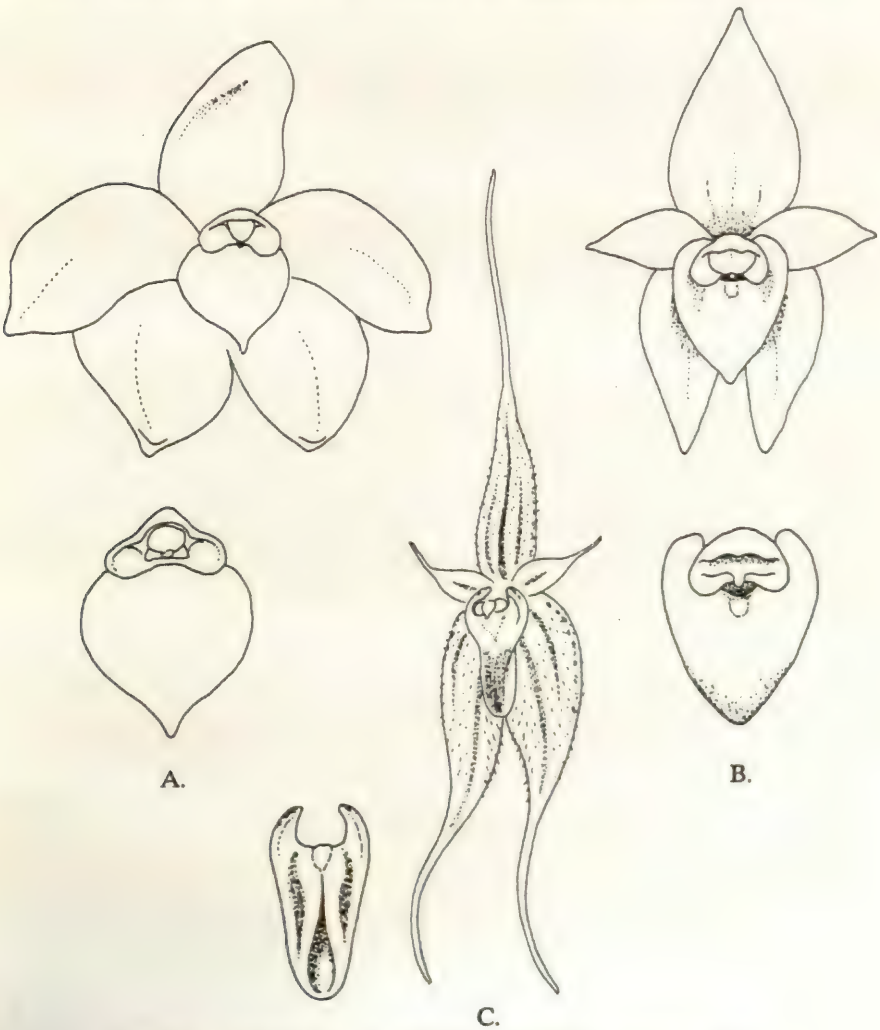

Figure 2. Flowers of A. *Platystele compacta* (Ames) Ames
B. *Lepanthopsis dodii* Garay
C. *Platystele teaguei* Luer

EPITHETS PUBLISHED IN *PLATYSTELE* AND LIST OF ILLUSTRATIONS

Platystele acicularis Luer & Hirtz.....Plate 1.
Platystele aculeata Luer.....Plate 2.
Platystele acutilingua Kapuler & Hascall.....Plate 3.
Platystele altarica Luer.....Plate 4.
Platystele alucitae Luer.....Plate 5.
Platystele argentosa Luer & Escobar.....Plate 6.
Platystele aurea Garay = **Pleurothallis rubella** Luer
Platystele brasiliensis Brade = **Platystele oxyglossa**
Platystele brenneri Luer.....Plate 7.
Platystele bulbinella Schltr. = **Platystele compacta**
Platystele calantha P. Ortiz.....Plate 8.
Platystele calymma Luer.....Plate 9.
Platystele caudatisepala C. Schweinf.....Plate 10.
Platystele compacta (Ames) Ames.....Plate 11.
Platystele consobrina Luer.....Plate 12.
Platystele crinita Luer & Hirtz.....Plate 13
Platystele cuculigera P. Ortiz = **Platystele alucitae**
Platystele culex Luer & Escobar = **Platystele examen-culicum**
Platystele dasyglossa P. Ortiz.....Plate 14.
Platystele densiflora P. Ortiz.....Plate 15.
Platystele dodsonii Luer.....Plate 16.
Platystele dressleri Luer.....Plate 17.
Platystele edmundoi Pabst.....Plate 18.
Platystele enervis Luer.....Plate 19.
Platystele escobariana Garay = **Platystele schmidtchenii**
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Platystele filamentosa Luer.....Plate 21.
Platystele fimbriata Luer & Hirtz.....Plate 22.
Platystele gemmula Luer = **Platystele microglossa**
Platystele gyroglossa Luer.....Plate 23.
Platystele halbingeriana (Schultes) Garay = **Platystele minimiflora**
Platystele hirtzii Luer.....Plate 24.
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Platystele londonoana Luer & Escobar.....Plate 29.
Platystele lycopodioides Luer & Hirtz.....Plate 30.
Platystele megaloglossa Luer & Escobar.....Plate 31.
Platystele microglossa P. Ortiz.....Plate 32.

Platystele microscopica Luer.....Plate 33.
Platystele microtatantha (Schltr.) Garay.....Plate 34.
Platystele minimiflora (Schltr.) Garay.....Plate 35.
Platystele misasiana P. Ortiz.....Plate 36.
Platystele misera (Lindley) Garay.....Plate 37.
Platystele muscicola Luer & Hirtz.....Plate 38.
Platystele myoxura Luer & Hirtz.....Plate 39.
Platystele orchestris P. Ortiz.....Plate 40.
Platystele orectoglossa P. Ortiz.....Plate 41.
Platystele ornata Garay.....Plate 42.
Platystele ortiziana Luer & Escobar.....Plate 43.
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Platystele ovatilabia (Ames & Schweinf.) Garay.....Plate 45.
Platystele oxyglossa (Schltr.) Garay.....Plate 46.
Platystele pedicellaris (Schltr.) Garay.....Plate 47.
Platystele perpusilla (Reichb. f.) Garay.....Plate 48.
Platystele phasmida Luer & Escobar.....Plate 49.
Platystele pisifera (Lindley) Luer.....Plate 50.
Platystele porphyroglossa P. Ortiz = **Platystele gyroglossa**
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Platystele reflexa Luer.....Plate 56.
Platystele repens Ames.....Plate 57.
Platystele resimula Luer & Hirtz.....Plate 58.
Platystele rex Luer & Escobar.....Plate 59.
Platystele rhinocera Luer.....Plate 60.
Platystele schmidtchenii Schltr.....Plate 61.
Platystele schneideri P. Ortiz.....Plate 62.
Platystele schulzeana (Schltr.) Garay = **Platystele oxyglossa**
Platystele spatulata Luer.....Plate 63.
Platystele stellaris Luer.....Plate 64.
Platystele stenostachya (Reichb. f.) Garay.....Plate 65.
Platystele stevensonii Luer.....Plate 66.
Platystele stonyx Luer.....Plate 67.
Platystele taylorii Luer.....Plate 68.
Platystele teaguei Luer.....Plate 69.
Platystele umbellata P. Ortiz.....Plate 70.
Platystele vetulus Luer & Hirtz.....Plate 71.
Platystele viridis Luer.....Plate 72.
Platystele xiphochila (Reichb. f.) Garay = **Trichosalpinx xiphochila** (Reichb. f.) Luer
Platystele zeus Luer & Hirtz.....Plate 73.

KEY TO THE SUBGENERA AND SPECIES OF *PLATYSTELE*

1 Dorsal sepal 3-veined, lateral sepals at least 2-veined; lip sulcate with basal lobes surrounding the column 76
1' All three sepals 1-veined (rarely without veins); lip neither sulcate nor with basal lobes surrounding the column 2

Subgenus *Platystele*

2 Habit distinctly repent 3
2' Habit caespitose, or very shortly repent 7

Habit repent

3 Leaves broadly ovate, more or less prostrate 4
3' Leaves narrowly elliptic, more or less erect 5

4 Dorsal sepal long-caudate ..... *P. johnstonii*
4' Dorsal sepal ovate, more or less obtuse ..... *P. ovalifolia*

5 Mature leaves up to 20 mm long; inflorescence considerably shorter than the leaf ..... *P. repens*
5' Mature leaves less than 10 mm long; inflorescence as long as or longer than the leaf 6

6 Mature leaves 5-10 mm long; inflorescence up to 20 mm long ..... *P. minimiflora*
6' Mature leaves 3-4 mm long; inflorescence up to 5 mm long ..... *P. jungermannioides*

* * *

7 Inflorescence successively flowered, 1 or sometimes 2, rarely 3 flowers open simultaneously 28
7' Inflorescence simultaneously or successively flowered, with 3 or more flowers open simultaneously 8

Habit caespitose; inflorescence simultaneously flowered

8 Inflorescence shorter than the leaf, densely flowered 9
8' Inflorescence as long as or longer than the leaf 12

9 Sepals and petals glabrous 10
9' Sepals and petals ciliate 11

10 Lip obtuse, cellular-glandular ..... *P. stenostachya*
10' Lip acute, cellular-pubescent ..... *P. dasyglossa*

11 Lip about as large as the sepals, ovate, the sides not revolute, the apex not convex ..... *P. umbellata*
11' Lip larger than the sepals, pandurate with revolute sides, the apex convex ..... *P. ortiziana*

12 Inflorescence more or less simultaneously flowered 13
12' Inflorescence successively flowered, several flowers open simultaneously on a continually lengthening raceme 23

13 Lip acute or acuminate 14
13' Lip subacute, obtuse or rounded 17

14 Sepals and petals obtuse, ciliate ..... *P. ornata*
14' Sepals and petals acute, not ciliate 15

15 Floral parts acuminate ..... *P. dodsonii*
15' Floral parts acute 16

16 Lip thickened and incurved at the apex ..... *P. perpusilla*
16' Lip neither thickened nor incurved at the apex ..... *P. lancilabris*

17 Petals falcate ..... *P. calymma*
17' Petals not falcate 18

18 Petals cellular-ciliate ..... *P. misasiana*
18' Petals not cellular-ciliate 19

19 Sepals acuminate, the laterals nearly parallel ..... *P. schmidtchenii*
19' Sepals not acuminate 20

20 Lateral sepals nearly parallel; lip oblong 21
20' Lateral sepals diverging; lip not oblong 22

21 Sepals narrowly obtuse; lip with a large glenion ..... *P. viridis*
21' Sepals acute to subacute; lip with a small glenion ..... *P. edmundoi*

22 Mature leaves less than 5 cm long; lip ovate ..... *P. ovatilabia*
22' Mature Leaves 5-9 cm long; lip suborbicular ..... *P. gyroglossa*

23 Inflorescence very congested, the terminal portion of the raceme crowded with overlapping flowers 24
23' Inflorescence subdensely flowered 25

24 Flowers crowded into a subumbellate tip of the inflorescence; petals obtuse; lip abruptly pointed ..... *P. compacta*
24' Flowers crowded into an elongate portion of the inflorescence; petals acute; lip rounded ..... *P. densiflora*

25 Leaves ovoid, semiterete; lip acuminate ..... *P. rauhii*
25' Leaves neither ovoid nor semiterete; lip subacute to narrowly rounded 26

26 Leaves obovate, obtuse; inflorescence up to 25 cm long 27
26' Leaves narrowly elliptical, acute; inflorescence up to 50 cm long; pedicels 3.5-5 mm long ..... *P. consobrina*

27 Pedicels less than 3.5 mm long; sepals less than 4 mm long ..... *P. misera*
27' Pedicels more than 3.5 mm long; sepals more than 5 mm long ..... *P. orectoglossa*

* * *

28 Inflorescence considerably longer than the leaf 44
28' Inflorescence shorter to a little longer than the leaf 29

Inflorescence short, successively flowered

29 Inflorescence loosely flowered 30
29' Inflorescence congested or densely flowered 33

30 Plant 7-10 cm tall; lip oblong, obtuse ..... *P. londonana*
30' Plant less than 3 cm tall; lip acute 31

31 Lip long-acuminate, much longer than the sepals ..... *P. acutilingua*
31' Lip about as long as the sepals 32

32 Plant 2-3 cm tall; sepals 4-5 mm long ..... *P. propinqua*
32' Plant less than 1 cm tall; sepals ca. 1.5 mm long ..... *P. taylorii*

33 Peduncle arising from high on the ramicaul, shorter than the leaf 34
33' Peduncle arising from low on the ramicaul, about as long as the leaf 37

34 Lip cordate at the base ..... *P. argentosa*
34' Lip not cordate at the base 35

35 Petals and lip shortly ciliate ..... *P. dressleri*
35' Petals glabrous; lip cellular-glandular 36

36 Petals and sepals not reflexed, less than 1.5 mm long ..... *P. stenostachya*
36' Petals and lip acutely reflexed, up to 2.5 mm long ..... *P. reflexa*

37 Lip obovoid, obtuse ..... *P. calantha*
37' Lip ovate, acute 38

38 Sepals narrowly long-acuminate, 6-12 mm long 39
38' Sepals subacute to acuminate, 2-6 mm long 40

39 Dorsal sepal more than 10 mm long; lip ovate, acute ..... *P. caudatisepala*
39' Dorsal sepal about 6 mm long; lip acuminate ..... *P. brenneri*

40 Lip proportionately small, less than one-third as long as the sepals 41
40' Lip about half to two-thirds as long as the sepals 42

41 Sepals caudate, the laterals diverging ..... *P. microglossa*
41' Sepals long-attenuate, the laterals converging ..... *P. orchestris*

42 Sepals subacute; lip cleft and long-ciliate ..... *P. crinita*
42' Sepals acuminate; lip neither cleft nor ciliate 43

43 Sepals shortly acuminate; petals oblique, subfalcate ..... *P. pedicellaris*
43' Sepals gradually acuminate; petals narrowly ovate ..... *P. pisifera*

Inflorescence long, successively and loosely 1- to 2-flowered

44 Apex of the lip rounded to narrowly obtuse, not incurved 45
44' Apex of the lip subacute, acute, acuminate or incurved 50

45 Sepals pubescent 46
45' Sepals not pubescent, but may be ciliate 47

46 Lip pandurate, ciliate ..... *P. muscicola*
46' Lip transversely cordate-ovate, cellular-glandular ..... *P. pubescens*

47 Lip obovate with the apex rounded 48
47' Lip not obovate 49

48 Leaves up to 2 cm long; dorsal sepal acuminate;
petals narrowly linear-ovate ..... *P. stevensonii*
48' Leaves up to 7 cm long; dorsal sepal acute;
petals narrowly ovate ..... *P. pyriformis*

49 Lip elliptical, about one-fourth as long as the sepals ..... *P. posadarum*
49' Lip ovate with a large glenion, about half as long
as the sepals ..... *P. altarica*

50 Lip very thick with the apex short, thick, incurved 51
50' Lip ovate, acute or subacute 55

51 Leaves spathulate; lip suborbicular ..... *P. spatulata*
51' Leaves not spathulate; lip not suborbicular 52

52 Sepals acuminate, acute 53
52' Dorsal sepal obtuse to rounded 54

53 Lip broadly ovoid with the incurved apex obtuse ..... *P. resimula*
53' Lip narrowly ovate with the incurved apex acute ..... *P. jesupiorum*

54 Sepals and petals fimbriate ..... *P. fimbriata*
54' Sepals and petals entire ..... *P. rhinocera*

55 Lip with a prominent basal callus 56
55' Lip without a prominent basal callus 58

56 Lip narrowly linear-ovate with the basal callus pedunculate ..... *P. microscopica*
56' Lip ovate with a broad, thick, basal callus 57

57 Sides of the lip revolute ..... *P. schneideri*
57' Sides of the lip not revolute ..... *P. microtatantha*

58 Lip large, about as long as or longer than the sepals 59
58' Lip smaller and shorter than the sepals 65

59 Sepals more than 2.5 mm long 60
59' Sepals less than 1.5 mm long 62

60 Sepals abruptly acuminate; lip narrowly ovate ..... *P. megaloglossa*
60' Sepals gradually acuminate; lip ovate, acuminate 61

61 Petals narrowly ovate, essentially glabrous; lip not long-acuminate ..... *P. propinqua*
61' Petals linear, minutely ciliate; lip long-acuminate ..... *P. acicularis*

62 Petals very narrow, up to 0.1 mm wide 63
62' Petals ovate, 0.3-0.4 mm wide 64

63 Lip ovate, acute, not convex ..... *P. enervis*
63' Lip elliptical, convex ..... *P. filamentosa*

64 Plant excluding inflorescence less than 1 cm tall ..... *P. lycopodioides*
64' Plant more than 2 cm tall ..... *P. ovatilabia*

65 Lip long-fimbriate ..... *P. vetulus*
65' Lip not long-fimbriate 66

66 Lip ovoid and bicallous with an abrupt, tail-like apex ..... *P. myoxura*
66' Lip ovate, acute, without an abrupt, tail-like apex 67

67 Lip ovate with the apex acute and acuminate 68
67' Lip ovate with the apex acute, not acuminate 70

68 Leaves ovoid, semiterete ..... *P. rauhii*
68' Leaves elliptical, coriaceous, not semiterete 69

69 Lip ovate, contracted near the middle into a subulate apex ..... *P. examen-culicum*
69' Lip narrowly ovate, acuminate, acute ..... *P. aculeata*

70 Sepals 6 or more mm long; lip 4-6 mm long 71
70' Sepals up to 5 mm long; lip up to 3.5 mm long 73

71 Sepals long-acuminate, 13-15 mm long; lip ovate, not longitudinally channeled 72
71' Sepals acute, ca. 6 mm long; lip fusiform, longitudinally channeled ..... *P. orectoglossa*

72 Sepals and petals broadly ovate at the base ..... *P. stellaris*
72' Sepals and petals narrowly ovate from the base ..... *P. hirtzii*

73 Lip less than 1 mm long with a large glenion; petals filamentous ..... *P. alucitae*
73' Lip at least 1 mm long without a prominent glenion; petals not filamentous 74

74 Inflorescence loose, more or less flexuous 75
74' Inflorescence more or less congested, not flexuous ..... *P. pisifera*

75 Lip broadly channeled, bicallous at the base ..... *P. stonyx*
75' Lip neither channeled nor bicallous at the base ..... *P. oxyglossa*

Subgenus *Teagueia*

76 Leaves with undulate margins; sepals 3-4 cm long; petals suborbicular, obtuse ..... *P. zeus*
76' Leaves not undulate; sepals 1-2 cm long; petals acute or acuminate 77

77 Sepals about 1 cm long; lip without a basal callus ..... *P. teaguei*
77' Sepals about 2 cm long; lip with a conspicuous callus at the base 78

78 Lateral sepals 3 mm wide; lip suborbicular, 3 mm wide, glabrous except for the callus ..... *P. rex*
78' Lateral sepals 1.5 mm wide; lip ovate, 1.5 mm wide, shortly pubescent ..... *P. phasmida*

Platystele acicularis Luer & Hirtz, sp. nov.

Ety.: From the Latin *acicularis*, "sharply pointed," referring to the floral parts.

Planta parva caespitosa, inflorescentia racemosa flexuosa foliis ellipticis longiore, sepalis petalisque angustissime ovatis minutissime ciliatis, labello magno crasso anguste ovoideo apice attenuato base truncato transverse calloso, disco leviter canaliculato.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 3-4 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 15-40 mm long including the petiole 5-10 mm long, the blade elliptical, subacute to obtuse, 5-9 mm wide, the base cuneate into the petiole. **Inflorescence** a loose, flexuous, distichous, successively many-flowered raceme, up to 15 cm long including the slender, suberect peduncle 3-5 cm long, emerging laterally from the ramicaul; floral bracts oblique, 1-1.5 mm long; pedicels 3-7 mm long; ovary 0.5 mm long; **sepals** similar, translucent pale yellow or pale tan, minutely ciliate, short-pubescent, narrowly ovate, acute, 5.5-6.5 mm long, 1.25-1.6 mm wide, free to the base; **petals** colored as the sepals, ciliate, with the hairs capitate, narrowly ovate-triangular, acute, attenuate, 5-6 mm long, 0.5 mm wide; **lip** protuberant, dark purple or dark brown, thick, semiterete, cellular-glandular, narrowly ovate, 5-6 mm long, 0.75-1.4 mm wide, the acute apex long-attenuate, the disc with a superficial, longitudinal sulcus, the base subtruncate-concave, with a transverse callus, more or less concave between the halves, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Morona-Santiago: epiphytic in cloud forest between Macas and Guamote, alt. 1500 m, 6 Feb. 1987, *C. Luer, J. Luer & A. Hirtz 12693* (Holotype: MO). Prov. of Carchi: El Carmelo, alt. 2400 m, May 1985, *A. Hirtz 2649* (MO). Prov. of Morona-Santiago: Cordillera del Condor, east of Chuchumbletza, alt. 1750 m, 21 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13562* (MO); east of the pass between Gualaceo and Limón, alt. 2100 m, 16 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11852* (MO). Prov. of Napo: between Cotundo and Coca, alt. 1000 m, Feb. 1984, *A. Hirtz 1522* (MO). Prov. of Pastaza: Río Negro at Río Pastaza, alt. 1150 m, 12 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11187* (MO). Prov. of Zamora-Chinchipe: between Loja and Zamora, alt. 2250 m, 22 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13594* (MO).

Platystele acicularis is closely related to *P. pisifera* and the Colombian *P. stonyx*. Both *P. acicularis* and *P. pisifera* are widely distributed in Ecuador and intermediate forms seem to exist. The large lip of *P. acicularis* is ovoid with the apex long-attenuate and the disc superficially channeled medially. The lip of *P. stonyx* is smaller and broadly channeled. The lip of *P. pisifera* is ovate and acute. The sides of the lip of *P. acicularis* seem to wrap around the margins of the blade, often meeting in the midline on the back surface. The fine pubescence of the sepals and cilia of the petals also distinguish *P. acicularis*.

Platystele aculeata Luer, Phytologia 49: 197, 1981.

Ety.: From the Latin *aculeatus*, "sharp-pointed," referring to the apices of the floral parts.

Plant small, epiphytic, densely caespitose; roots comparatively coarse. Ramicauls erect, slender, 5-8 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 12-20 mm long including the petiole 5-10 mm long, the blade elliptical, subacute, 4-5 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a loose, flexuous, distichous, successively several- to many-flowered raceme up to 11 cm long, borne by an erect, slender peduncle ca. 2 cm long, arising laterally from the ramicaul; floral bracts thin, 0.75 mm long; pedicels 3-3.5 mm long; ovary 0.5 mm long, subcostate; **sepals** translucent light tan, glabrous, narrowly ovate, acute, attenuate, the dorsal sepal 6 mm long, 1 mm wide, 1-veined, the lateral sepals oblique, 6 mm long, 1-2 mm wide, free to the base; **petals** translucent light tan, narrowly ovate, acute, long-attenuate, 5 mm long, 0.5 mm wide at the base; **lip** brown, cellular-glandular, narrowly linear-ovate, 3-4.5 mm long, 0.75-1 mm wide, the apex acute, attenuate, incurved, the base truncate with a large glenion, reflexed to a rigid attachment to the column-foot; **column** cucullate at the apex, 1 mm long and broad, the stigma bilobed, the foot rudimentary.

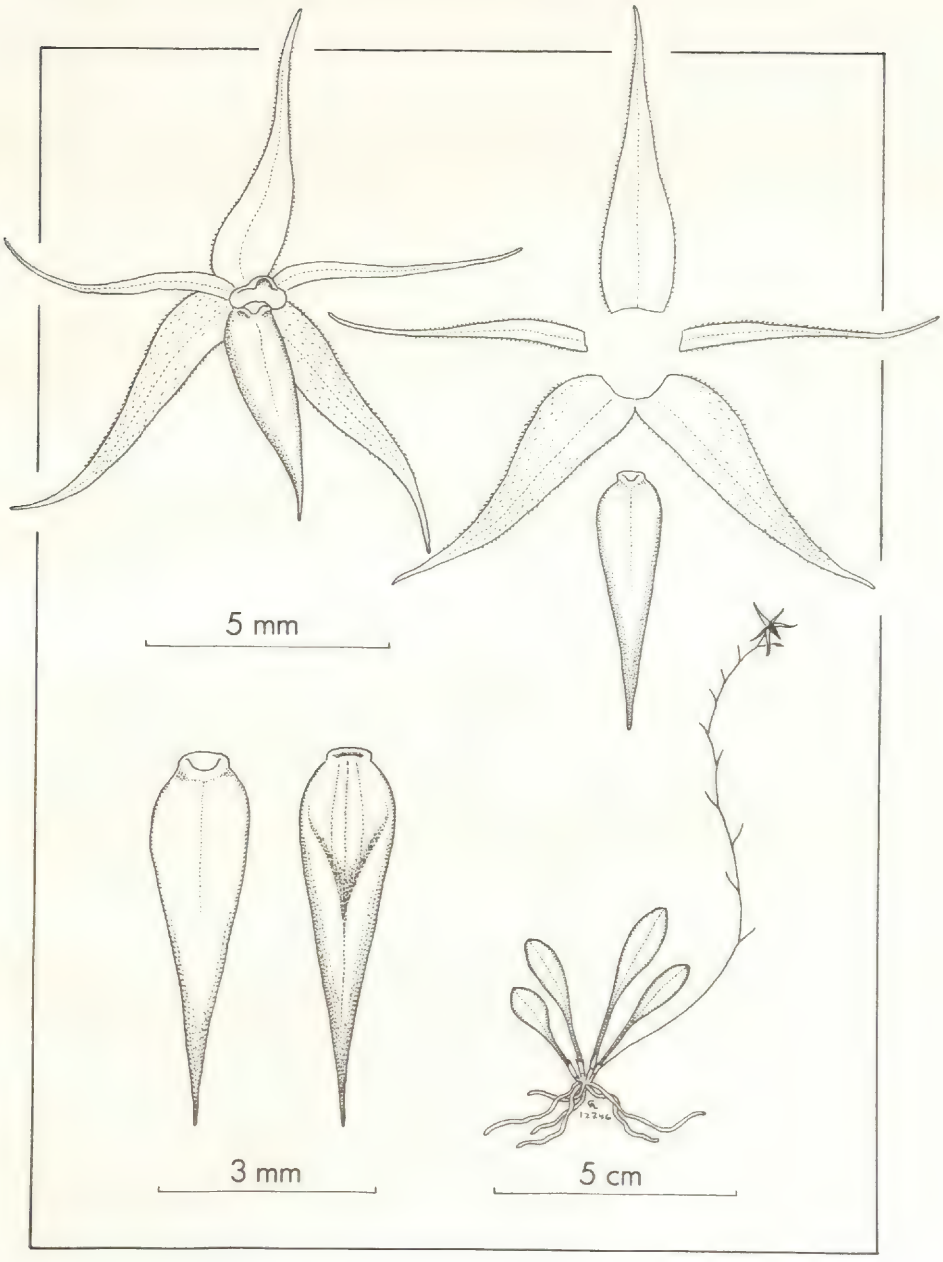

Plate 1. *Platystele acicularis* Luer & Hirtz

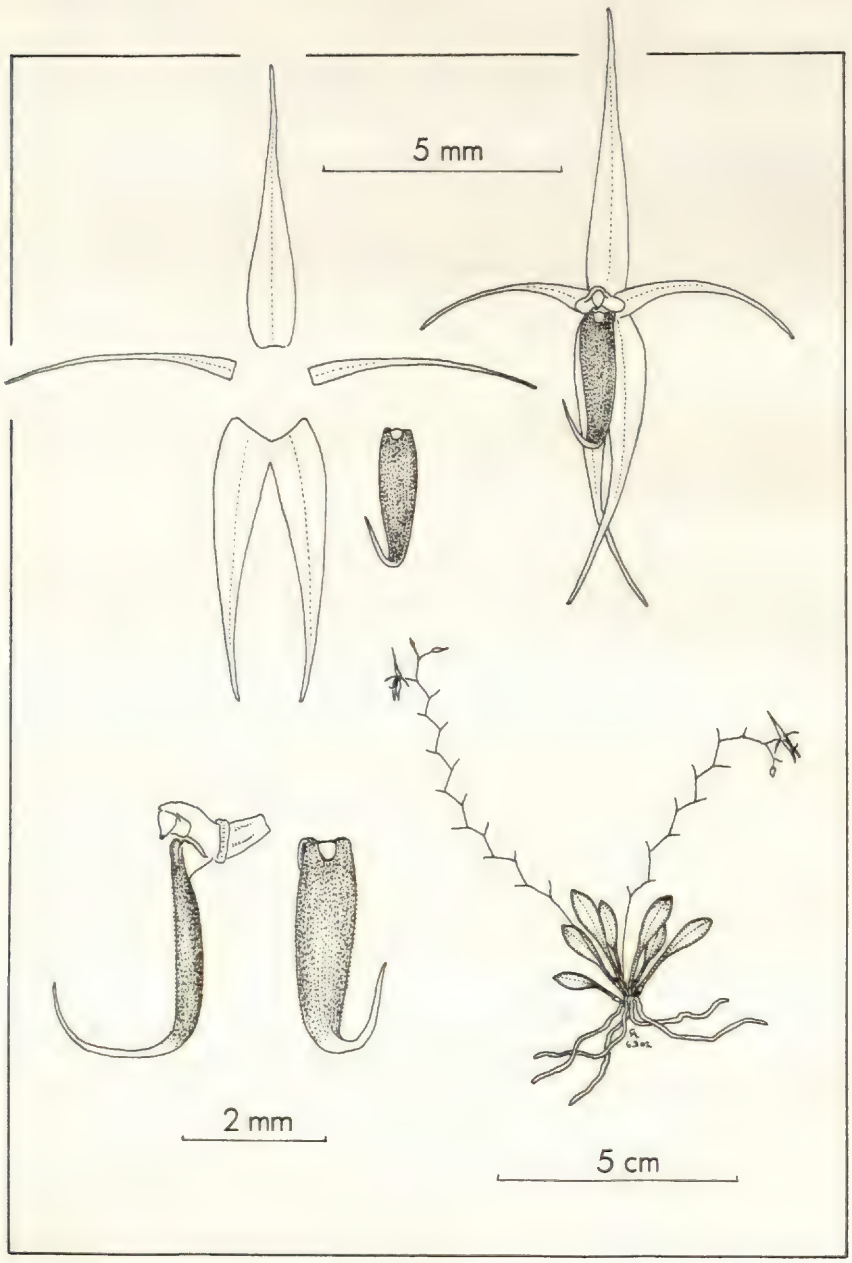

Plate 2. *Platystele aculeata* Luer

ECUADOR: Prov. of Napo: epiphytic in cloud forest southeast of El Carmelo, alt. 2050 m, 17 May 1981, *C. Luer, J. Luer & A. Hirtz 6303* (Holotype: SEL). Prov. of Pastaza: epiphytic in forest along Río Zuñag, alt. 2200 m, 23 Feb. 1990, *A. Hirtz et al. 4615* (MO). Prov. of Zamora-Chinchipe: epiphytic in cloud forest above Valladolid, alt. 2450 m, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10945* (MO).

This species has been found on only a few occasions in Ecuador. It is easily distinguished from the other similar members of the genus by the long-attenuate floral parts with the up-curved, hooklike apex of the lip.

Platystele acutilingua Kapuler & Hascall, Bull. Amer. Orchid Soc. 35: 544, 1966.

Ety.: From the Latin *acutilingua*, "an acute tongue," referring to the long-acuminate lip.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 1-3 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 8-15 mm long including the petiole 2-4 mm long, the blade elliptical, subacute, 2.5-3 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a loose, flexuous, distichous, successively several-flowered raceme up to 35 mm long including the erect, slender peduncle ca. 10 mm long, arising laterally from the ramicaul; floral bracts thin, 0.5 mm long; pedicels 1.5 mm long; ovary 0.5 mm long; **sepals** translucent yellow, glabrous, ovate, subacute to obtuse, 1 mm long, 0.75 mm wide, 1-veined, the dorsal sepal concave, the lateral sepals oblique, free to the base; **petals** translucent yellow, narrowly linear, acute, 0.9 mm long, 0.05 mm wide; **lip** red, narrowly ovate, acute, long-attenuate, 2.5 mm long, 0.3 mm wide, the base truncate with a transverse callus, attached to the column-foot; **column** broadly cucullate, 0.5 mm long and broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Chocó: between Tutunendo and El Carmen, foothills of the Western Cordillera, *V. C. Kapuler & A. M. Hascall 268* (Holotype: COL). Dept. of Antioquia: Parque Nacional Natural "Las Orquideas," Río Calles, alt. 1250-1375 m, 31 May 1988, *A. Cogollo & J. Ramírez 3138* (JAUM, MO).
ECUADOR: Prov. of Pichincha: near Dos Ríos, between Santo Domingo and Chiriboga, alt. 1190 m, 5 July 1971, *B. MacBryde 552* (AMES); epiphytic in forest at the Río Palenque Science Station, collected by C. H. Dodson, alt. 300 m, Nov. 1978, *C. Luer 4042* (SEL); near Puerto Quito, alt. 370 m, 26 Jan. 1985, *C. H. Dodson & P. M. Dodson 15509* (MO). Prov. of Esmeraldas: epiphytic in forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, C. H. Dodson & A. Hirtz 12417* (MO).

This tiny species is related to the frequent and widely distributed *P. oxyglossa*, but the former is easily recognized by the obtuse sepals, narrowly linear petals, and the long-attenuate lip more than twice longer than the sepals. *Platystele acutilingua* is not uncommon in the low, wet coastal forests from the Chocó in Colombia to lowland, westcentral Ecuador.

Platystele altarica Luer, Phytologia 46: 354, 1980.

Ety.: Named for Volcán Altar, below which this species was discovered.

Plant small, epiphytic, caespitose; roots fleshy. Ramicauls erect, slender, 3-4 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 15-20 mm long including a petiole 3-5 mm long, the blade obovate, obtuse, 5-6 mm wide, cuneate below into the petiole. **Inflorescence** an erect, loose, distichous, strict, successively several-flowered raceme 3-5 cm long including the slender peduncle ca. 2 cm long, arising laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 4 mm long; ovary 0.5 mm long; **sepals** translucent yellow with a

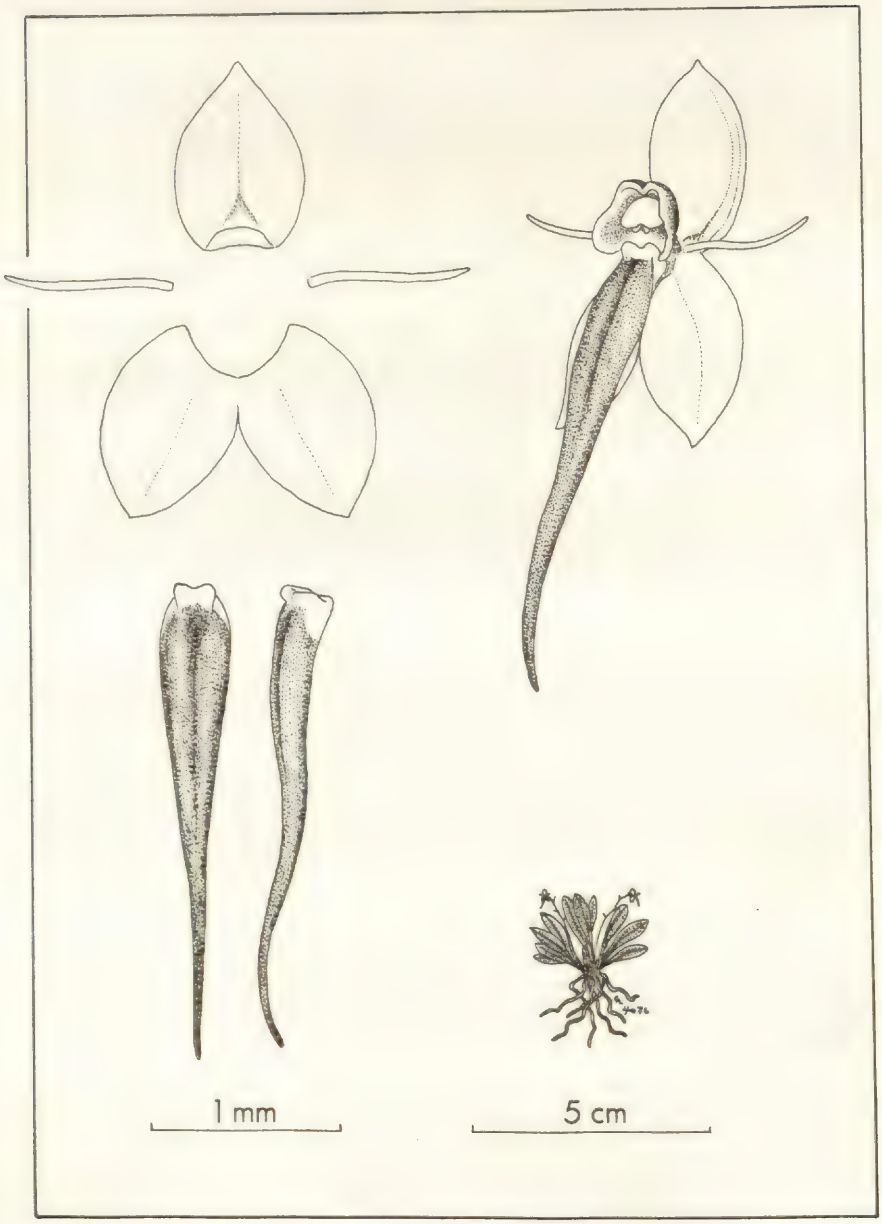

Plate 3. *Platystele acutilingua* Kapuler & Hascall

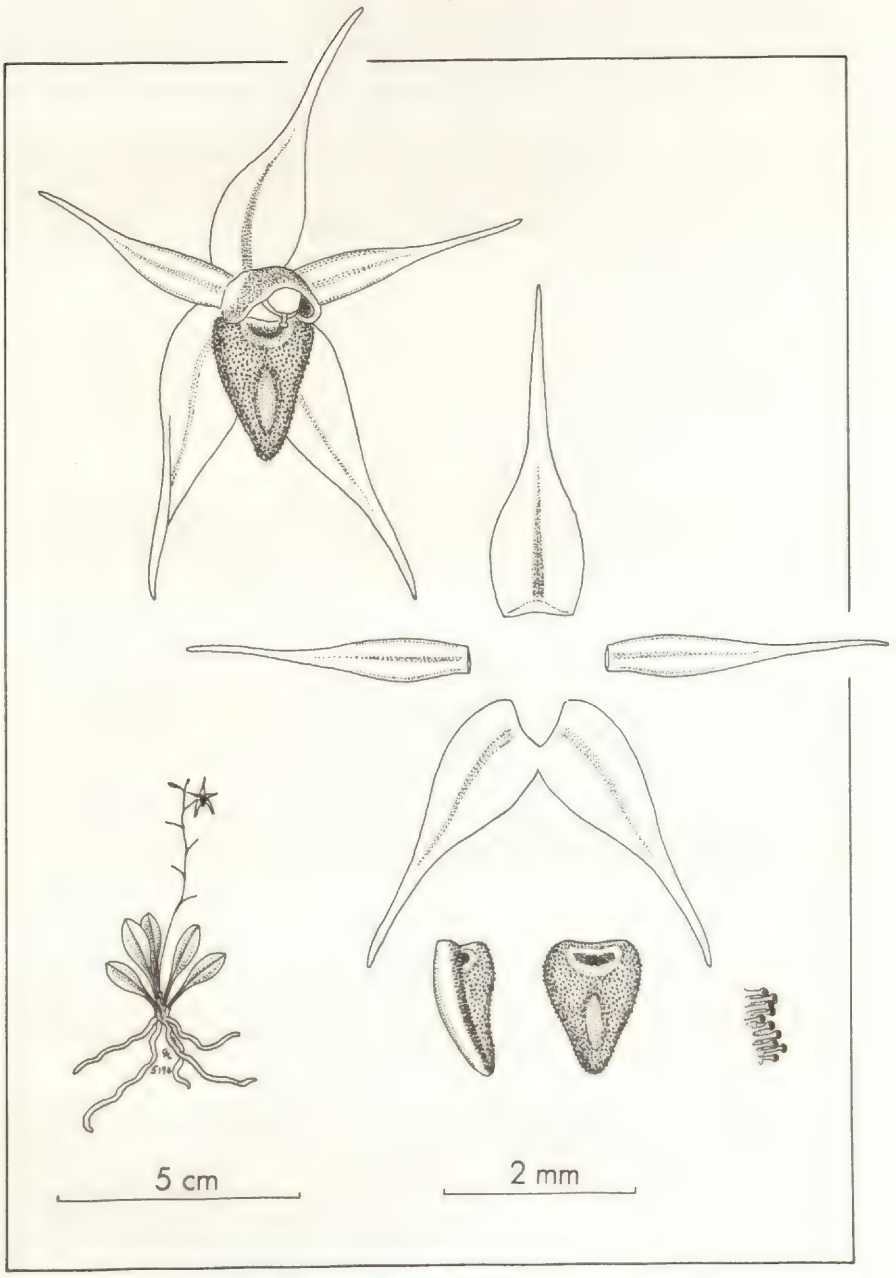

Plate 4. *Platystele altarica* Luer

brown midvein, glabrous, ovate below the middle, the apex acute, long-acuminate, the dorsal sepal, 3.5 mm long, 1 mm wide, the lateral sepals, oblique, 3.2 mm long, 1 mm wide, free to the base; **petals** translucent yellow with a brown midvein, narrowly ovate, acute, long-acuminate, 3 mm long, 0.5 mm wide, the margins microscopically cellular; **lip** purple, covered by long, capitate cells, ovate, narrowly obtuse, 1.3 mm long, 1 mm wide, the base truncate with a large, transverse glenion, the disc with a flat, elliptical depression devoid of the capitate hairs; **column** large, cucullate, 1 mm long and broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Chimborazo: epiphytic in cloud forest on the western slope of Volcán Altar, alt. 3200 m, 14 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 5196* (Holotype: SEL).

This species is known only from the original collection on the western flank of Volcán Altar, but this area is seldom visited. *Platystele altarica* is recognized by the brown-striped sepals and petals, and an ovate, dark purple lip, covered by capitate cells, with a large glenion and a central depression.

Platystele alucitae Luer, Phytologia 46: 355, 1980.

Ety.: From the Latin *alucitae*, "gnats," in allusion to the appearance of the inflorescence.

Syn.: *Platystele cuculligera* P. Ortiz, Orquideología 14: 210, 1981.

Ety.: From the Latin *cuculliger*, "hood-bearing," referring to the dorsal sepal and column.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls slender, 1-5 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 8-18 mm long including the petiole 3-7 mm long, the blade narrowly elliptical-obovate, subacute, 3-5 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a loose, flexuous, distichous, successively several- to many-flowered raceme up to 18 cm long including the erect, slender peduncle 1-2 cm long, arising laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 3-6 mm long; ovary 0.5 mm long; **sepals** translucent greenish white, sometimes suffused with rose, glabrous, the dorsal sepal ovate and concave in the lower quarter or third, with the subacute apex contracted into a filiform tail, 3 mm long, 0.75-1 mm wide above the base, 1-veined, the lateral sepals narrowly ovate, oblique, subcarinate, acute, attenuate, free to the base, 3.5-4 mm long, 0.5-0.9 mm wide; **petals** narrowly linear, filamentous, acute, long-attenuate, 2.25-3 mm long, 0.1 mm wide at the base; **lip** dark brown, cellular-glandular, ovate, acute, 0.75-1.5 mm long, 0.5-0.8 mm wide, lightly excavate centrally, the base truncate with a large glenion, attached to the column-foot; **column** cucullate, 0.8 mm long and broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Imbabura: epiphytic in cloud forest above Apuela, alt. ca. 2500 m, 8 Feb. 1979, *C. Luer, J. Luer, R. Escobar & A. Hirtz 3943* (Holotype: SEL); Selva Alegre, alt. 1400 m, May 1989, *A. Hirtz & X. Hirtz 4239, 4240* (MO). Prov. of Bolívar: north of Chillanes, alt. 2300 m, 25 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9705* (MO). Prov. of Carchi: east of Maldonado, alt. 2400 m, 4 Apr. 1984, *C. Luer, S. Dalström & T. Höijer 9943* (MO). Prov. of El Oro: near Piñas, alt. 1000 m, collected by C. H. Dodson, flowered in cultivation 25 Mar. 1981, *C. Luer 5988* (SEL). Prov. of Pichincha: between Chiriboga and Santo Domingo, alt. 1950 m, 28 May 1988, *C. Luer & A. Hirtz 13709* (MO).
COLOMBIA: Dept. of Antioquia: Cocorná, collected by L. C. Vieira, flowered in cultivation in Bogotá, Aug. 1979, *P. Ortiz 969* (COL, type of *P. cuculligera*); Ituango, collected by J. M. Serna, 1974, flowered in cultivation by M. & O. Robledo at La Ceja, 24 Jan. 1978, *C. Luer 2322* (SEL); Munic. of El Carmen, above San Lorenzo, alt. 2500 m, 21 Mar. 1989, *C. Luer, J. Luer & W. Teague 14330, 14332* (MO); east of Santo Domingo, alt. 2170, 12 May 1985, *C. Luer, R. Escobar & E. Valencia 11344* (MO); Munic. of Yarumal, Quebrada El Oro, alt. 1850 m, 16 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14177* (MO). Dept. of Santander: west of Velez, alt. 2500 m, 5 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10099* (MO).

This delicately flowered little species is rather frequent and widely distributed through the Andes from the Eastern Cordillera of Colombia to southern Ecuador. It is distinguished by the concave, long-tailed sepals; narrowly linear, usually upcurved petals; and a short, ovate, cellular-glandular lip.

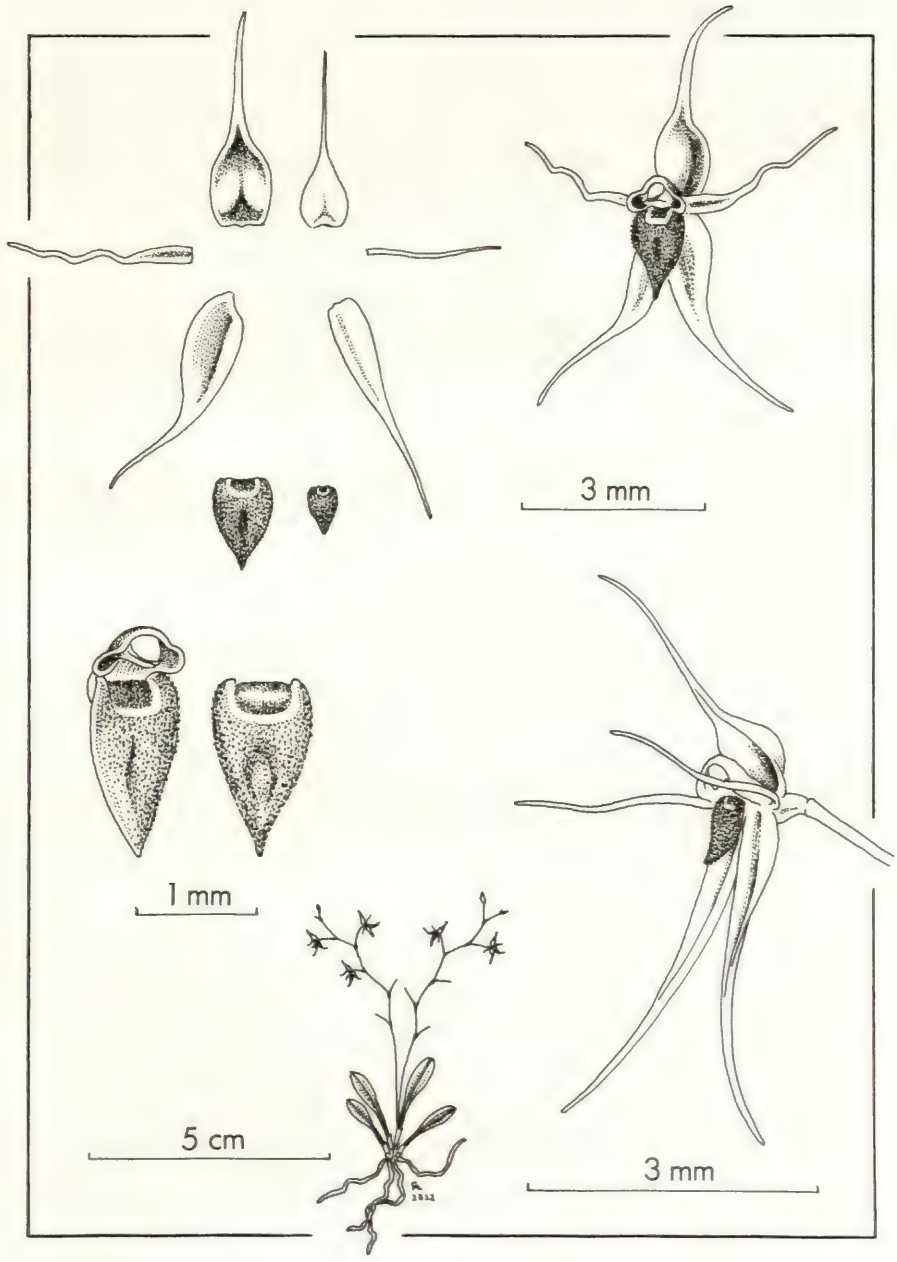

Plate 5. *Platystele alucitae* Luer

Platystele argentosa Luer & Escobar, sp. nov.

Ety.: From the Latin *argentosus*, "full of silver," referring to the unusually large numbers of crystalline deposits in the leaves and flower parts.

Planta parva caespitosa, foliis ellipticis obtusis petiolis conduplicatis, inflorescentia racemosa folio breviore, sepalis ovatis obtusis, petalis subfalcatis acutis ciliatis, labello crasso carnoso ovoideo ciliato apice acuto incurvo.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 5-10 mm long, enclosed by 2-3 loose, imbricating sheaths. **Leaf** erect, coriaceous, gray-green, with numerous, minute, crystalline deposits, obovate, obtuse, 15-25 mm long including a broad, conduplicate petiole 3-5 mm long, 8-12 mm wide, the base narrowed into the petiole. **Inflorescence** a very congested, successively many-flowered raceme up to 5 mm long, borne by a slender peduncle 7-10 mm long within the sulcus of the petiole; floral bracts thin, 0.75 mm long; pedicels 1.5-2 mm long; ovary 0.5 mm long; **sepals** translucent green, ovate, obtuse, with minute, crystalline deposits, the dorsal sepal 1.8 mm long, 1.2 mm wide, 1-veined, the lateral sepals oblique, 1.5 mm long, 1.2 mm wide, connate basally; **petals** translucent green, with similar, crystalline deposits, linear-oblong, arcuate, acute, ciliate, 1.5 mm long, 0.4 mm wide; **lip** dark purple, ciliate and cellular pubescent, thick, ovoid, 1.2 mm long, 1.2 mm wide, the apex acute, incurved, the base cordate with lobes flanking the column; **column** cucullate at the apex, 0.6 mm long, the stigma bilobed, the foot obsolescent.

COLOMBIA: Dept. of Antioquia: Parque Nacional Natural "Las Orquideas," Río Calles, alt. 1250-1375 m, 31 May 1988, *A. Cogollo & J. Ramírez 3137* (Holotype: JAUM; Isotype: MO); same area, Quebrada El Guaguo, alt. 1390-1420 m, 12 Feb. 1989, *A. Cogollo, D. Cárdenas & O. Alvarez 3911* (JAUM, MO). Dept. of Chocó: without known collector, flowered in cultivation by M. & O. Robledo at La Ceja, 22 Nov. 1981, *C. Luer 6750* (SEL).

Vegetatively this species is distinctive with gray-green, spathulate leaves broadly conduplicate at the base. In the dried state, numerous, minute, crystalline deposits are visible within the substance of the leaves. The peduncle of the inflorescence lies in the sulcus of the petiole to bear the flowers in a congested raceme near the middle of the dorsum of the leaf. The sepals and petals are green and bear crystalline deposits similar to those seen in the leaves. The lip is deep purple, thick, ovoid, and ciliate with a cordate base and an incurved apex.

Platystele brenneri Luer, Selbyana 3: 24, 1976.

Ety.: Named in honor of Joe Brenner, formerly of Puyo, Ecuador, who discovered and cultivated this species at Hostería Thüringia.

Plant very small, epiphytic, caespitose; roots comparatively fleshy. Ramicauls erect, slender, 1-3 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, elliptical-obovate, obtuse, apiculate, 6-8 mm long 2-3 mm wide, cuneate below into the subpetiolate base. **Inflorescence** a congested, successively several-flowered raceme up to 5 mm long including the erect, filiform peduncle 4-10 mm long, arising laterally from the ramicaul; floral bracts thin, 0.75 mm long; pedicels 2 mm long; ovary 0.5 mm long; **sepals** translucent light yellow, with red along the midvein, glabrous, narrowly ovate, acute, the dorsal sepal long-attenuate, 6 mm long, 0.75 mm wide, the lateral sepals oblique, attenuate, 4 mm long, 1 mm wide, free to the base; **petals** translucent yellow, very narrowly ovate, acute, attenuate, 3 mm long, 0.5 mm wide near the base; **lip** bright red, ovate, acute, shortly acuminate, 1.75 mm long, 1 mm wide, the base truncate, attached to the column-foot; **column** cucullate, 0.5 mm long, 1 mm wide, the stigma bilobed, the foot rudimentary.

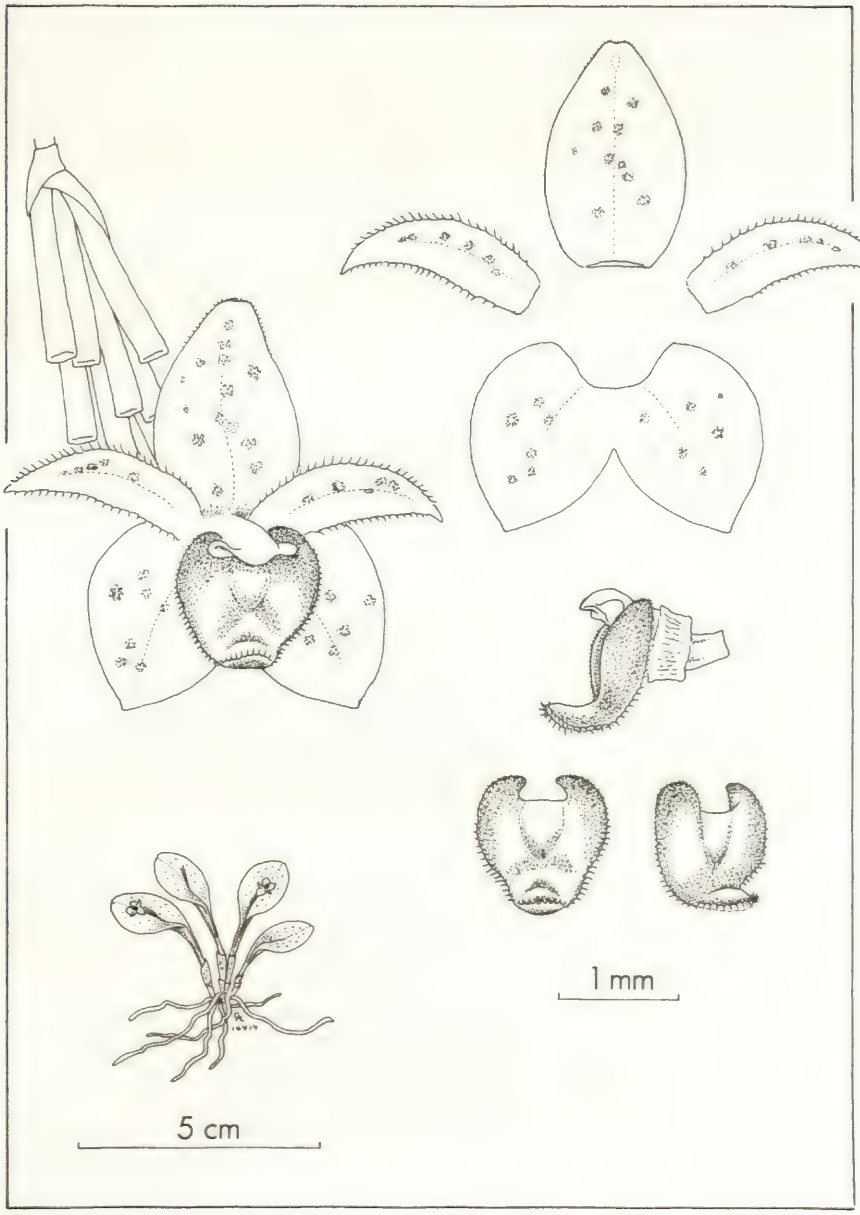

Plate 6. *Platystele argentosa* Luer & Escobar

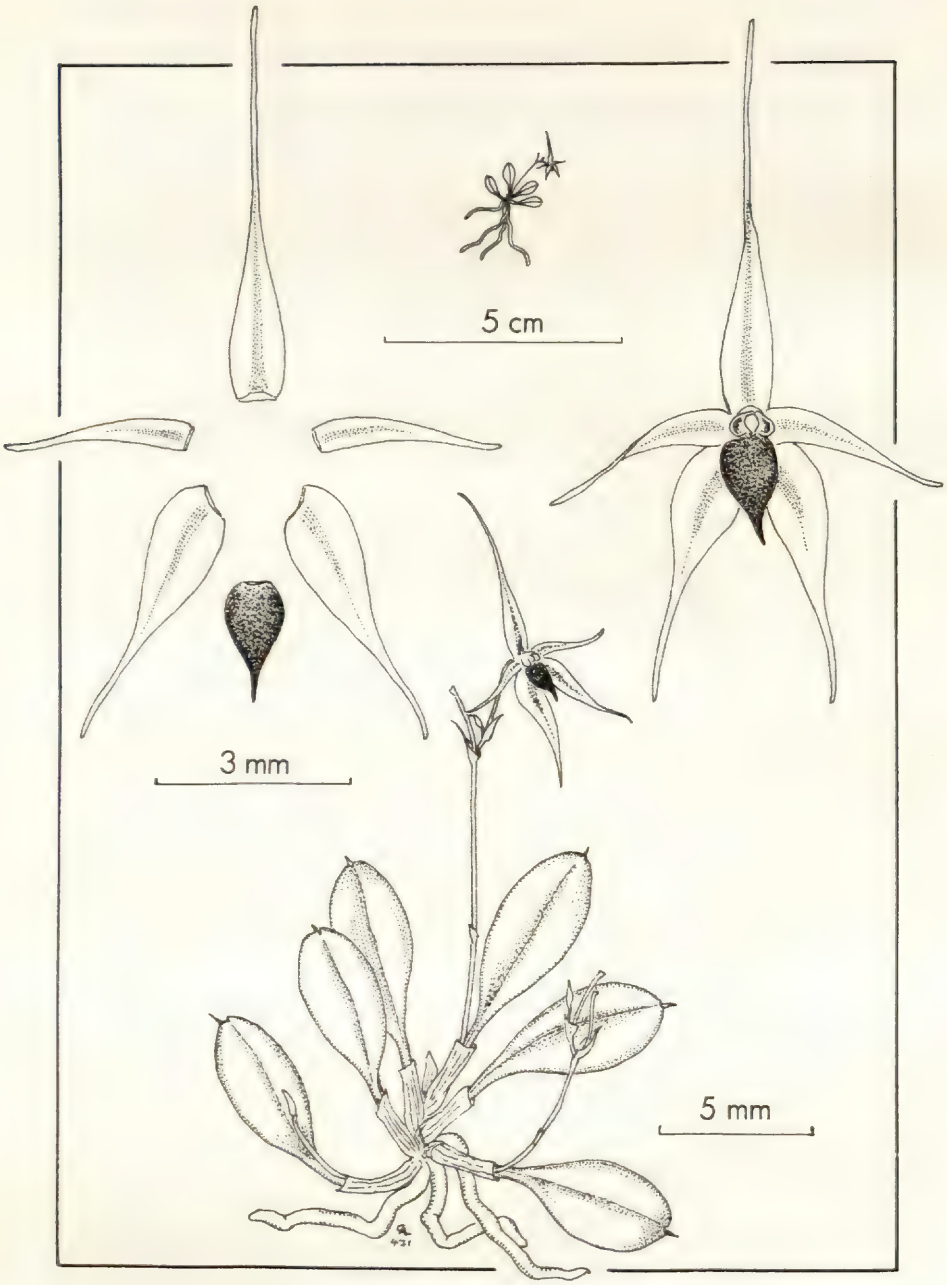

Plate 7. *Platystele brenneri* Luer

ECUADOR: Prov. of Pastaza: without locality, cultivated on logs behind Hotel Turingia by Joe Brenner, flowered 30 July 1975, *C. Luer 471* (Holotype: SEL); epiphytic in forest 20 km east of Puyo, alt. ca. 1000 m, 19 Mar. 1976, *C. Luer, J. Luer & P. Taylor s.n.* (SEL); epiphytic in forest 10 km north of Puyo, alt. 1000 m, 12 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11206* (MO). PANAMA: Prov. of Darién: mountains between Tubualá (San Blas) and Masargandi (Darién), alt. 400-500 m, 2 Feb. 1977, *R. L. Dressler 5593* (MO).

This tiny species is known from two distant localities at relatively low altitudes: one in the Oriente of Ecuador and the other in the Darién of Panama. It is readily identified by the tiny caespitose habit; flowers with long-attenuate sepals, the dorsal sepal somewhat longer than the lateral sepals, and the small, ovate, acute lip. A long-attenuate dorsal sepal is also seen in the repent *P. johnstonii* from coastal Venezuela. *Platystele brenneri* is also closely allied to *P. caudatisepala*, but the much longer dorsal sepal and the larger habit easily distinguish the latter.

Platystele calantha P. Ortiz, Orquideología 12: 138, 1977.

Ety.: From the Greek *calanthos*, "a beautiful flower," referring to the most attractive flower in a genus not noted for its beauty.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-5 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 15-25 mm long including a petiole 3-5 mm long, the blade narrowly elliptical, subacute, 4-6 mm wide, narrowly cuneate below into the indistinct petiole. **Inflorescence** an erect to suberect, congested, successively several-flowered raceme to 10 mm long, borne by a filiform peduncle to 15 mm long, arising laterally from the ramicaul; floral bracts oblique, 1.5 mm long; pedicels 4 mm long; ovary costate, 1 mm long; **sepals** translucent yellow-white, glabrous, ovate, acute, the dorsal sepal 7 mm long, 2.5 mm wide, 1-veined, the lateral sepals oblique, 6 mm long, 2.5 mm wide, 1-veined, free to the base; **petals** translucent yellow-white, ovate, acute, 6 mm long, 2 mm wide; **lip** yellow-green, suffused with red below the middle, thick, fleshy, obovoid with the apex rounded, the sides recurved, 3.5 mm long, 1.5 mm wide, the base truncate with a low, transverse callus, fixed to the column-foot; **column** cucullate, 0.5 mm long and broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Yarumal, "El Oro," alt. 2050 m, *R. Escobar 1414* (Holotype: COL); flowered in cultivation by M. & O. Robledo at La Ceja, 15 Oct. 1977, *C. Luer 2044* (SEL).
ECUADOR: Prov. of Esmeraldas: wet forest west of Lita, alt. 800 m, 13 Aug. 1986, *A. Hirtz 2972* (MO).

This proportionately large-flowered species is one of the more attractive species of the genus, hence its "beauty" because it can be seen better with the naked eye. The flowers of plants discovered in northwestern Ecuador are not as large as those originally discovered in Colombia. *Platystele calantha* was first discovered in the Western Cordillera of Colombia by Rodrigo Escobar. The simple sepals and petals are yellow-white, ovate and acute, and the obovate, thickened lip is suffused with red at the base.

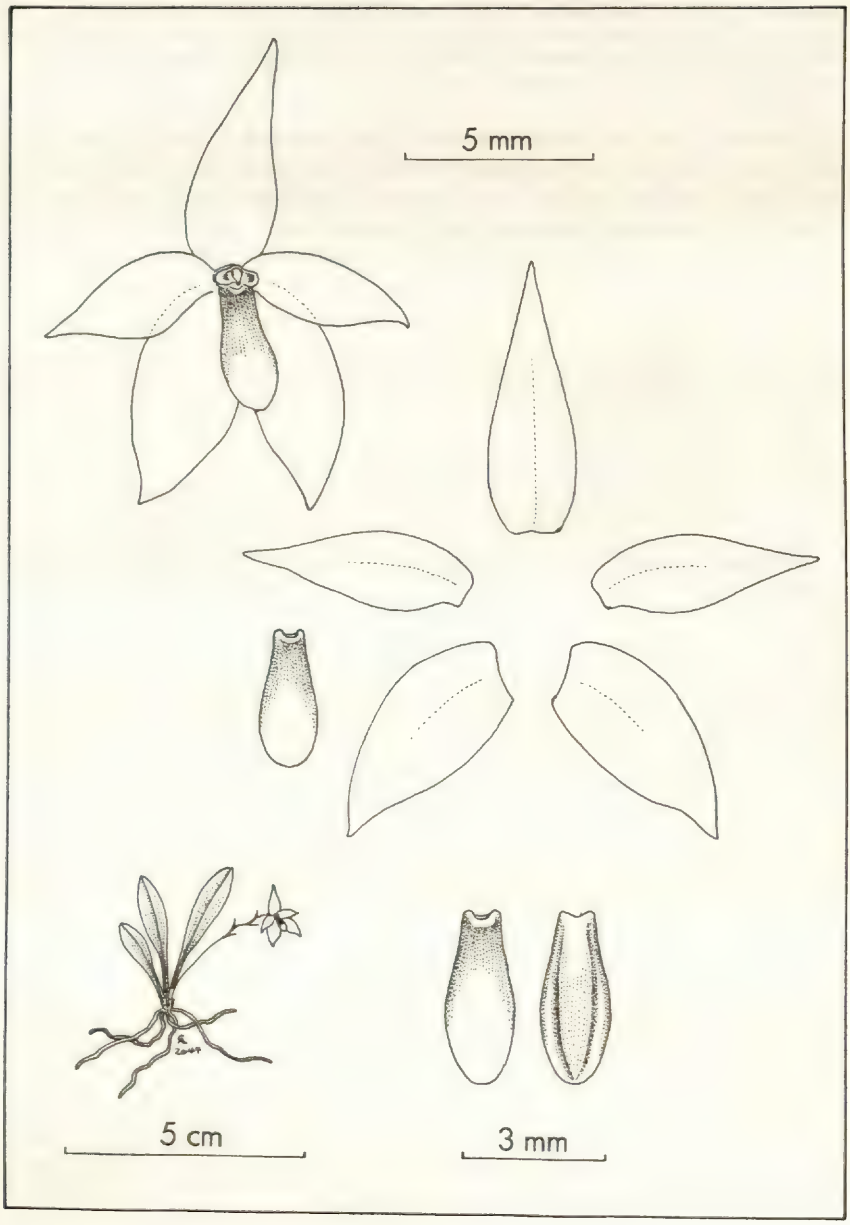

Plate 8. *Platystele calantha* P. Ortiz

Platystele calymma Luer, Selbyana 3: 266, 1977.

Ety.: From the Greek *calymma*, "a hood," referring to the large, cucullate column.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-10 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect to suberect, coriaceous, 20-35 mm long including a petiole 5-8 mm long, the blade elliptical-obovate, obtuse, 7-10 mm wide, cuneate below into the petiole. **Inflorescence** a weak, suberect, loose, successively several-flowered raceme up to 6-8 cm long including the filiform peduncle ca. 3 cm long, arising laterally from the ramicaul; floral bracts oblique, 1 mm long; pedicels 3 mm long; ovary 0.5 mm long; **sepals** translucent greenish white, glabrous, 1-veined, the dorsal sepal oblong, acute, concave, 2 mm long, 0.9 mm wide, the lateral sepals falcate, acute, 1.75 mm long, 0.8 mm wide, free to the base; **petals** translucent greenish white, narrowly obovate-falcate, acute, 1.75 mm long, 0.4 mm wide; **lip** green, fleshy, cellular-glandular, obovate, obtuse, 1 mm long, 0.6 mm wide, the base subtruncate with a transverse, semilunate callus, the disc with a shallow depression in the center, attached to the column-foot; **column** broadly cucullate, 1 mm long, 1.3 mm broad, the stigma bilobed, the foot rudimentary.

PANAMA: Prov. of Panamá: epiphytic in cloud forest along the El Llano-Cartí road, alt. 650 m, Feb. 1977, collected by R. L. Dressler s.n., flowered in cultivation 15 May 1977, *C. Luer 1622* (Holotype: SEL; Isotype: K); El Llano-Cartí highway, about 17 Km north of El Llano, 16 Jan. 1974, *R. L. Dressler 4542* (MO).

This species is apparently endemic in eastern Panama where it is not uncommon. It is recognized by the comparatively broad, obtuse leaves; a slender, weak inflorescence of light green flowers; falcate lateral sepals and petals; a fleshy, obovate lip; and a large, inflated, cucullate column.

Platystele caudatisepala (C. Schweinf.) Garay, Orquideología 9: 119, 1974.

Bas. : *Pleurothallis caudatisepala* C. Schweinf., Bot. Mus. Leafl. 4: 113, 1937.

Ety.: From the Latin *caudatisepalus*, "with caudate sepals," referring to the long-tailed sepals.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls slender, 2-4 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, elliptical, subacute, 12-25 mm long, 3-6 mm wide, narrowly cuneate below into the subpetiolate base. **Inflorescence** a congested, successively several-flowered raceme up to 8 mm long, borne by an erect, filiform peduncle 10-25 mm long, arising laterally from the ramicaul; floral bracts thin, 2 mm long; pedicels 3-4 mm long; ovary 0.5 mm long; **sepals** translucent green to yellow with red along the midvein, glabrous to microscopically ciliate, very narrowly ovate, acute, attenuate, 9-12 mm long, 1-veined, the dorsal sepal up to 32 mm long, 1 mm wide, the lateral sepals 1.5 mm wide, oblique, free to the base; **petals** translucent yellow, minutely ciliate, narrowly ovate, oblique, acute, 4-6 mm long, 0.75-1 mm wide; **lip** red, orange, or yellow, cellular-glandular, ovate, acute, 1.5-1.8 mm long, 0.6-0.75 mm wide, the base truncate with a glenion, attached to the column-foot; **column** cucullate, 0.5 mm long, 1 mm wide, the stigma bilobed.

COSTA RICA: Prov. of Alajuela: near San Ramón, alt. 800 m, 12 Oct. 1925, *A. M. Brenes (259)-1445* (Holotype: AMES); Palmira, region of Zarcero, alt. 6000 ft., 30 Aug. 1957, *A. Smith A289* (AMES).
MEXICO: Edo. Chiapas: Munic. de Ocosingo, near Laguna Ocotal Grande, Líbano, alt. 950 m, 5 Aug. 1954, *R. L. Dressler 1591* (AMES).
GUATEMALA: Dept. of Alta Verapaz: Sachichá, Cubilgüitz, alt. 400 m, collected by Francisco Archila, Oct. 1990, *C. Luer 14854* (MO).
PANAMA: Prov. of Bocas del Toro: Trocha 3 de noviembre, above Buenavista, alt. 500-800 m, 4 Apr. 1978, *R. L. Dressler 5800* (MO). Prov. of Chiriquí: Buenavista, 27 June 1975, *H. P. Butcher s.n.* (MO); between Concepción and Volcán, alt. ca. 1000 m, 12 Sept. 1976, *C. Luer & H. Butcher 1177* (SEL); near Fortuna dam site, alt. 1000 m, 13 Mar. 1982, *S. Knapp, W. Kress & B. Hammel 4107* (MO). Prov. of Coclé: near Aserradero El Copé, north of El Copé, alt. 830 m, 30 Dec. 1977, *R. L. Dressler 5770* (MO). Prov. of Darién: Cerro Pirre, 10 July 1977, *J. P. Folsum 4389* (MO). Prov. of Panamá: Cerro Campana, 21 July 1968, *R. L. Dressler 3548* (MO).
ECUADOR: Prov. of El Oro: epiphytic in cloud forest south of Piñas, alt. 950 m, 20 Mar 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10672* (MO). Prov. of Pichincha: between San Miguel de los Bancos and Mindo, alt. 1100 m, 1 Apr. 1984, *C. Luer, S. Dalström, T. Höijer & A. Hirtz 9859* (MO).

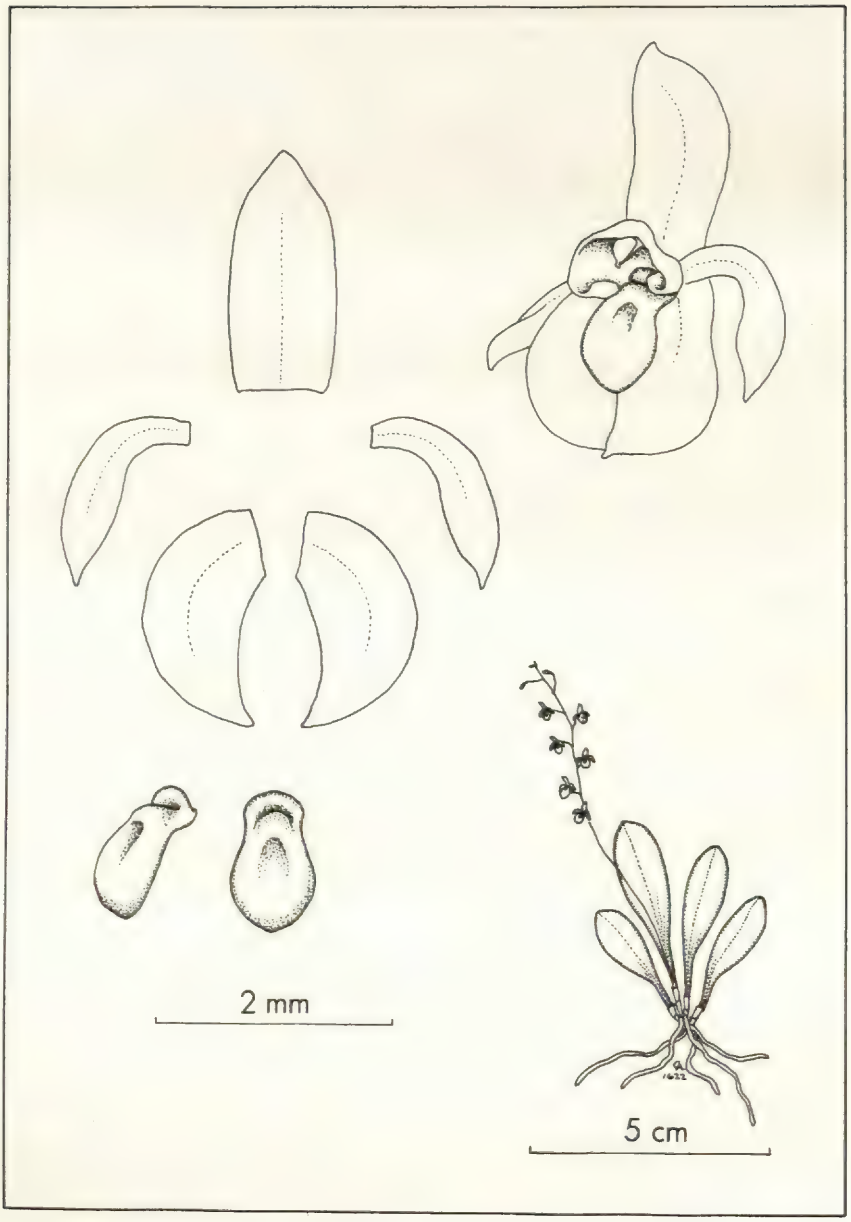

Plate 9. *Platystele calymma* Luer

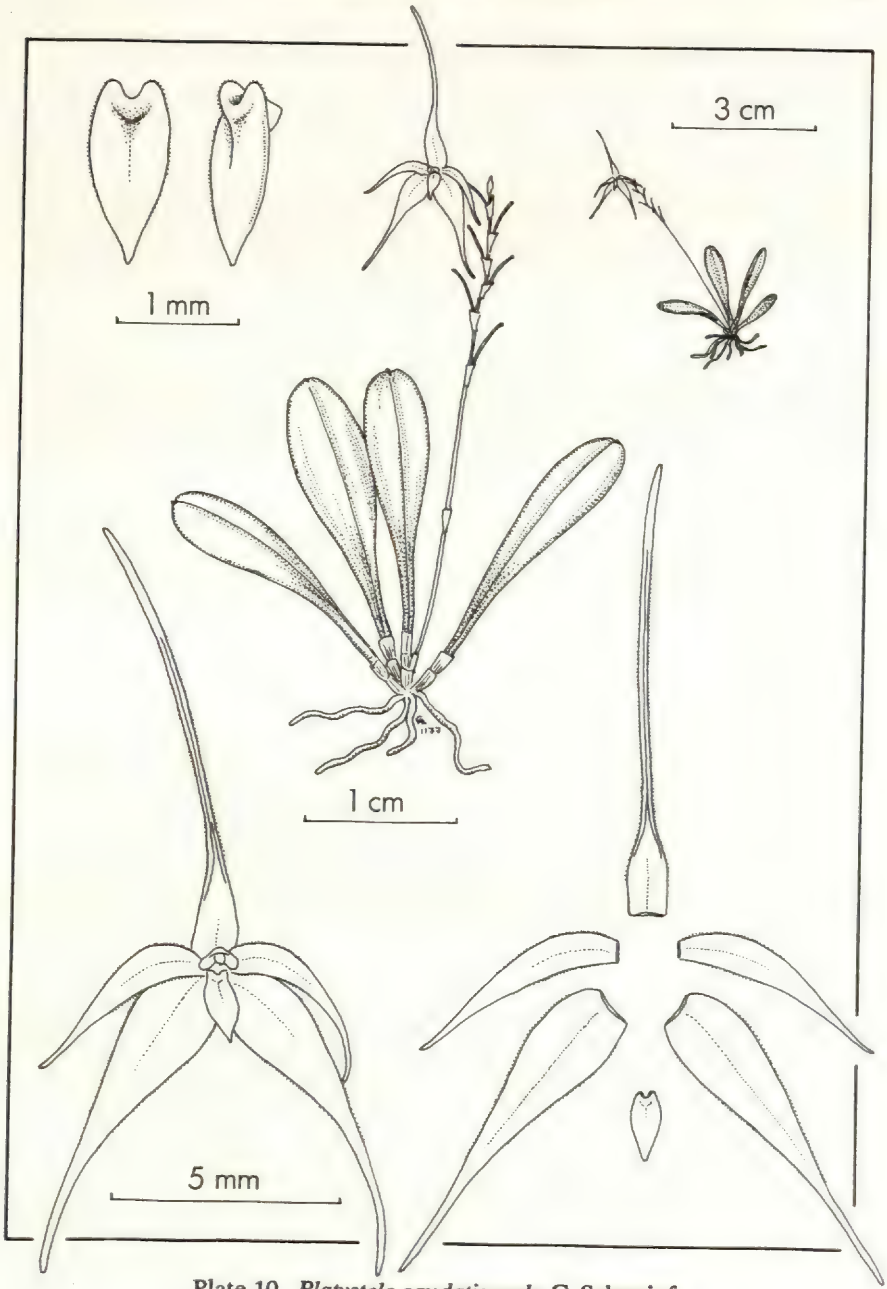

Plate 10. *Platystele caudatisepala* C. Schweinf.

This little species is found locally at low altitudes from Chiapas in Mexico, through Central America and into Ecuador. It is recognized by the caespitose habit, long-attenuate sepals, minutely ciliate petals, and a comparatively small, ovate lip. In freshly opened flowers the sepals are about equal in length, but the erect tail of the dorsal sepal continues to grow. It has been known to reach 32 mm in length.

Platystele compacta (Ames) Ames, Proc. Biol. Soc. Wash. 35: 85, 1922.

Bas.: *Stelis compacta* Ames, Orchidaceae 3: 76, t. 53, 1908.

Ety.: From the Latin *compactus*, "close together," referring to the congested inflorescence.

Syn.: *Platystele bulbinella* Schltr., Repert. Spec. Nov. Regni Veg. 8: 565, 1910.

Ety.: Named for the vegetative similarity to a small species of *Bulbine*, a South African genus in the Liliaceae.

Syn.: *Pleurothallis compacta* (Ames) Ames & Schweinf., Sched. Orchid. 10: 24, 1930.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 4-6 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, narrowly elliptical-obovate to linear, subacute to obtuse, 20-50 mm long, 2-5 mm wide, narrowly cuneate below into the subpetiolate base. **Inflorescence** a densely many-flowered raceme, with several flowers produced simultaneously and successively, up to 50 mm long, borne by an erect, slender peduncle 40-50 mm long, arising laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 2-3 mm long; ovary 0.5 mm long; **sepals** translucent yellow, ovate, glabrous, the dorsal sepal acute to subacute, 2-3 mm long, 1-1.5 mm wide, 1-veined, the lateral sepals broadly ovate, oblique, obtuse, 2-2.5 mm long, 1.5-1.75 mm wide, connate at the base; **petals** translucent yellow, ovate to obovate, oblique, obtuse, 2-2.5 mm long, 1-1.5 mm wide; **lip** orange, broadly ovate, obtuse, slightly acuminate, 1 mm long, 1 mm wide, the rounded base inflexibly attached to the column-foot; **column** cucullate, 0.5 mm long and broad, the stigma bilobed, the foot 0.5 mm long.

MEXICO: Edo. Veracruz: between Coyame and Bastonal, east of Lake Catemaco, alt. 950 m, 28 July 1973, *R. L. Dressler 4445* (MO).
GUATEMALA: Dept. of Alta Verapaz: Cubilqüitz, alt. 350 m, May 1901, *H. von Türckheim 7991* (Holotype: AMES).
HONDURAS: Dept. of Comayagua: Pito Solo, alt. 2000 ft., 8 Aug. 1932, *J. B. Edwards 214* (AMES). Dept. of Cortés: Santa Cruz de Yojoa, alt. 2000 ft., 31 Oct. 1933, *J. B. Edwards 574* (AMES).
NICARAGUA: Prov. of Granada: Volcán Mombacho, alt. 1200 m, 15 Jan. 1974, *J. Atwood & Neill 7043* (MO).
COSTA RICA: in forests of Rancho Flores, alt. 2043 m, Feb. 1890, *H. Pittier 2013* (US, type of *P. bulbinella*). Prov. of Alajuela: above Leeharia on Volcán Poás, alt. 7500 ft., 30 July 1932, *H. E. Stork* (AMES); Palmira, Alfaro Ruiz, alt. 2300 m, 21 June 1938, *A. Smith H787* (AMES); epiphytic on trees on Volcán Poás, alt. 2100 m, 20 June 1981, *C. Luer, A. Luer & L. D. Gómez 6340* (SEL). Prov. of Cartago: La Estrella, 23 July 1925, *C. H. Lankester 1031* (AMES). Prov. of Heredia: Yerba Buena, northeast of San Isidro, alt. 2000 m, 22-28 Feb. 1926, *P. C. Standley & J. Valerio 49735* (AMES); Cerro de Las Caricias, north of San Isidro, alt. 2000-2400 m, 11 Mar. 1926, *P. C. Standley & J. Valerio 52406* (AMES); Río Mancarron, south slopes of Volcán Barva, alt. 1840 m, 3 Apr. 1969, *R. W. Lent 1539* (AMES); between Volcán Irazú and Volcán Barva, 22 Apr. 1969, *G. Davidse & R. Pohl 1709* (MO); near Monte de la Cruz, 1 Feb. 1970 m, *R. L. Dressler 3781* (MO); Vara Blanca between Poás and Barva, alt. 1615 m, Mar. 1938, *A. F. Skutch 3643* (AMES); epiphytic on trees on Volcán Barba, alt. 1820 m, 20 Mar. 1986, *C. Luer, J. Luer, T. Linder & W. Rhodehamel 12128* (MO). Prov. of San José: Carpintera, Mar. 1924, *C. H. Lankester 789* (AMES); Las Nubes, alt. 1500-1900 m, 20 Mar. 1924, *P. C. Standley 38510* (AMES); Zurquí, alt. 2000-2500 m, 13 Feb. 1926, *P. C. Standley & J. Valerio 48238* (AMES); ?above Tobasi and on Coracol, alt. 1800-2200 m, 25 Jan. 1882, *F. C. Lehmann 1139* (G). Cordillera de Talamanca, Pacific slope, alt. 2500 m, 2 Apr. 1969, *G. Davidse & R. Pohl 1519* (MO); epiphytic on trees on Carpintera, alt. 2100 m, 23 Mar. 1986, *C. Luer, J. Luer, T. Linder & W. Rhodehamel 12143* (MO).
PANAMA: Prov. of Chiriquí: Cerro Colorado, alt. 2000 m, 16 Feb. 1977, *C. Luer, J. Luer & R. L. Dressler 1443* (SEL); Fortuna dam site, alt. 1200 m, 15 June 1984, *W. H. Churchill 5430* (MO); Dist. Bugaba, Cerro Pando, 28 Feb. 1985, *H. van der Werff & J. Herrera 7209* (MO); Cerro Punta, alt. 2300-2400 m, 7 June 1986, *G. McPherson 9431* (MO). Prov. of Veraguas: Guabal, Río Dos Bocas, northwest of Santa Fe, alt. 500 m, 17 May 1975, *R. L. Dressler 5036* (MO).

When Ames described *Platystele compacta* in the genus *Stelis*, he did so with hesitation, because he was unable to place the species in any of the known genera. He noted that the species was most closely allied to Reichenbach's *Stelis lancilabris*, and for that reason he chose to describe it in *Stelis*, after considering *Brachionidium* and *Pleurothallis*. In 1922, he transferred it to *Platystele* which had been defined by Schlechter in the meantime. Again being dissatisfied, Ames transferred it to *Pleurothallis* in 1930.

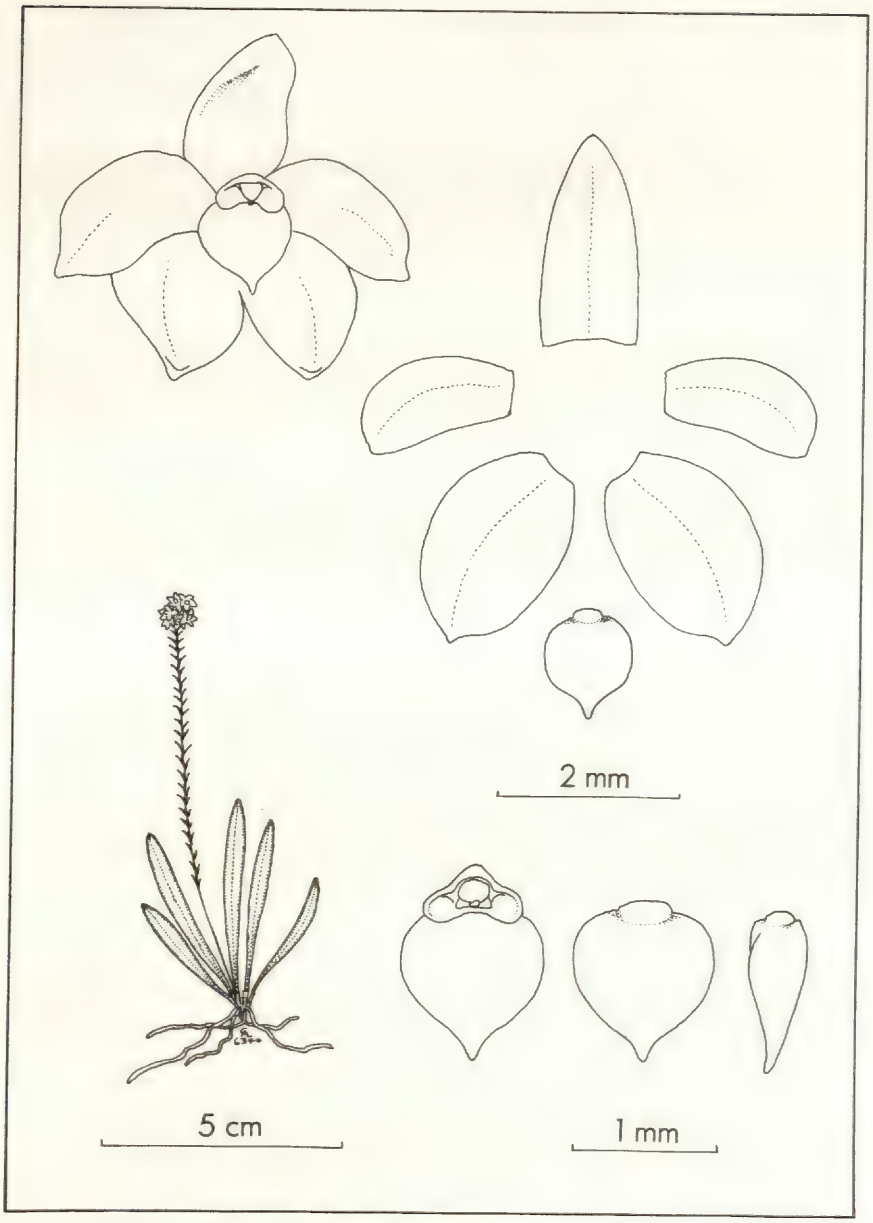

Plate 11. *Platystele compacta* (Ames) Ames

Platystele compacta is widely distributed in Middle America, most frequently in Costa Rica, where it had first been collected by Consul Lehmann, and adjacent Panama. Although somewhat variable in size and color, it is readily identified by the gradually elongating, densely flowered raceme that produces a cluster of tiny, yellowish, simultaneous flowers at the apex over a long period of time. Almost every plant is always in flower.

Platystele consobrina Luer, sp. nov.

Ety.: From the Latin *consobrinus*, "a cousin," referring to a relationship with *Platystele misera*.

Species haec *P. miserae* (Lindley) Garay affinis, sed foliis acutis angustioribusque, racemis multilongioribus, floribus majoribus, sepalis acutis et labello subacuto differt.

Plant medium in size to large for the genus, epiphytic, caespitose; roots fleshy. Ramicauls erect, slender, 0.5-1.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 3-6 cm long including a petiole 1.5-3 cm long, the blade elliptical, acute, 0.6-1 cm wide, cuneate below into the slender petiole. **Inflorescence** an erect, subdense, more or less secund, successively many-flowered raceme up to 50 cm long or longer, including the peduncle 5-15 cm long, several flowers produced simultaneously, emerging laterally from the ramicaul; floral bracts thin, 1.5-2 mm long; pedicels 3-5 mm long; ovary 1 mm long; **sepals** and petals rose with darker rose suffusion along the midvein, the sepals narrowly ovate, acute, glabrous, subcarinate, the dorsal sepal 4 mm long, 1.5 mm wide, the lateral sepals oblique, 4 mm long, 1.5 mm wide, free to the base; **petals** narrowly ovate, acute, glabrous, 3.75 mm long, 0.8 mm wide; **lip** dark rose, thick, cellular-glandular, elliptical, subacute, 2.5 mm long, 1.3 mm wide, the base subtruncate with a minute glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Munic. of La Ceja, between La Ceja and Río Piedras, alt. ca. 2200 m, collected by C. Head & R. Escobar, Sept. 1985, flowered in cultivation by the P. & A. Jesup in Bristol, CT., 6 May 1990, *C. Luer 14765* (Holotype: MO); same area, alt. 2150 m, 29 Apr. 1983. *C. Luer, J. Luer, R. Escobar, M. Webb & A. Pridgeon 8864* (SEL); Munic. of Cañasgordas, Palmita, road to Boquerón, alt. 2300 m, 22 Apr. 1983, *C. Luer, J. Luer, R. Escobar, M. Webb, A. Pridgeon & E. Hagsater 8750* (SEL); Munic. of Concepción, between Barbosa and Concepción, alt. 2200 m, collected by E. Valencia, flowered in cultivation at Colomborquídeas, 17 Apr. 1988, *C. Luer 13258* (MO); Munic. of Frontino, above Frontino, alt. 2120 m, 2 May 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & E. Valencia 9058* (SEL); Munic. of Jardin, Alto de Ventanas, alt. 2600 m, 26 May 1983, *R. Escobar 2708* (SEL); Munic. of Río Negro?, Alto del Buey between La Ceja and Abejorral, Apr., *F. C. Lehmann 4642* (AMES); above Aguadas, alt. 2500 m, 17 Sept. 1883, *F. C. Lehmann 3115* (G); Munic. of Urrao, Río Pabón, 7 Mar. 1944, alt. 2600-2800 m, *F. R. Fosberg 21577* (AMES). Dept. of Caldas: Río San Rafael below Cerro Tatamá, alt. 2600-2800 m, 7 Sept. 1922, *F. W. Pennell 10369* (AMES); southeast of Caldas, alt. 2650 m, 23 Oct. 1983, *A. Juncosa & G. Misas 1012* (MO). Dept. of Cauca: San Andres near Inzá, alt. 2300 m, 25 Feb. 1883, *F. C. Lehmann 2648* (G). Dept. of Risaralda: San Clemente, alt. 2100 m, 20 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7468* (COL, SEL). Dept of Valle del Cauca: Munic. Sevilla, finca Alsanieves between Sevilla and Barragán, alt. 2400 m, 10 Oct. 1981, *P. Silverstone 730* (COL).

This species is locally abundant in the northern parts of both the central and western cordillers of Colombia. It has long been confused with the Peruvian *P. misera*. Only recently were some of the differences pointed out to me by H. Phillips Jesup who has cultivated the two species side by side for many years.

Vegetatively *P. misera* is *Masdevallia*-like with broad, thickly coriaceous leaves with obtuse to rounded apices. The leaves of *P. consobrina* are smaller, thinner, narrower, with acute to subacute apices, and with longer petioles. The inflorescence of *P. misera* may sometimes surpass the leaf by three times the length before it expires, but the inflorescence of *P. consobrina* flowers continuously for a year or longer, approaching a meter in length as it bends and loops in different directions. The flowers of *P. consobrina* are considerably larger than those of *P. misera* with more acute floral parts.

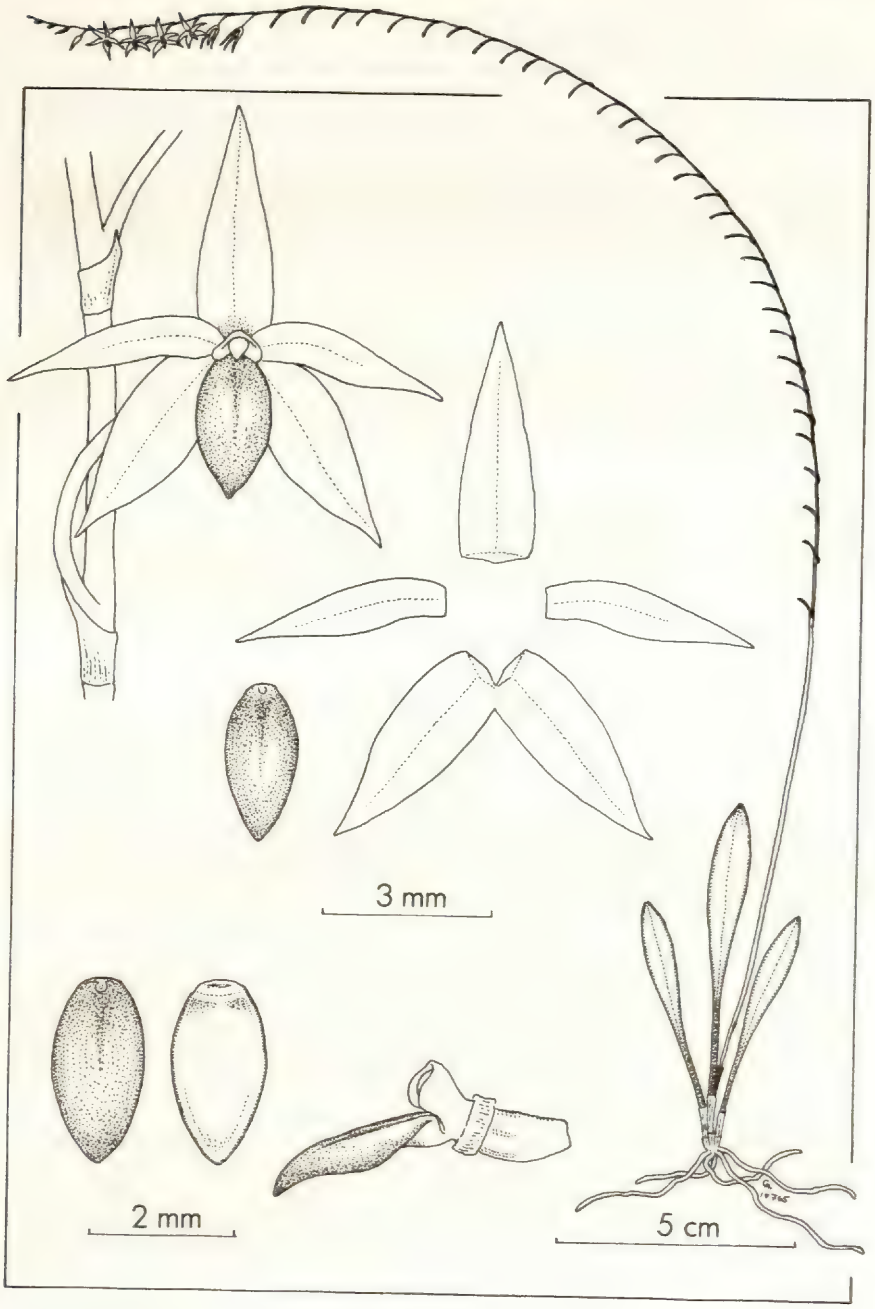

Plate 12. *Platystele consobrina* Luer

Platystele crinita Luer & Hirtz, sp. nov.

Ety: From the Latin *crinitus*, "fringed with long hairs," referring ciliate lip.

Planta minutissima caespitosa, racemo disticho subcongesto plurifloro foliis minutis longiore, sepalis petalis purpureis ovatis ciliatis, labello elliptico negro longiciliatis.

Plant very small, epiphytic, caespitose; roots filiform. Ramicauls slender, erect, 1-2 mm long, enclosed by 1-2 tubular sheaths. **Leaf** erect, coriaceous, petiolate, 5-6.5 mm long including the petiole 1.5-2 mm long, the blade elliptical, obtuse, 1.5-2 mm wide, the base cuneate into the slender petiole. **Inflorescence** a subcongested, flexuous, distichous, successively several-flowered raceme 10-13 mm long including the capillary peduncle 7-9 mm long, emerging laterally from low on the ramicaul; floral bract 0.75 mm long; pedicel 0.75-1.25 mm long; ovary 0.3 mm long; **sepals** purple, ciliate, ovate, acute, 1-veined, subcarinate, the dorsal sepal 2.5 mm long, 1 mm wide, the lateral sepals 2 mm long, connate 1 mm, 1.75 mm wide together, ciliate only on the inner margins; **petals** purple, ciliate, triangular-ovate, acute, 1.5 mm long, 0.4 mm wide; **lip** cellular-glandular, purple-black with long, white cilia, elliptical, subacute, 1.3 mm long, 0.6 mm wide, the disc shallowly concave, cleft below the middle between a pair of low calli, the base callus, fitted tightly beneath the column, firmly fixed to the base of the column; **column** 0.3 mm long, 0.5 mm broad.

ECUADOR: Prov. of Imbabura: epiphytic in wet forest near Lita, Alto Tambo, alt. 900 m, 15 June 1988, *A. Hirtz 3607* (Holotype: MO), C. Luer illustr. 14807.

This tiny species is characterized by the few-flowered, flexuous inflorescence that exceeds the leaf by about half its length; minutely ciliate, ovate, purple sepals; minutely ciliate, narrowly triangular petals; and a purple-black, elliptical lip with long, white, ciliate hairs. The lip is shallowly concave, but cleft below the middle between a pair of low calli.

Platystele dasyglossa P. Ortiz, Orquideología 14: 18, 1979.

Ety.: From the Greek *dasyglossa*, "a shaggy tongue," referring to the pubescence of the lip.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-4 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 15-30 mm long including the petiole 5-10 mm long, the blade elliptical, subacute, 7-10 mm wide, the base cuneate into the petiole. **Inflorescence** a very congested, subumbellate, simultaneously 5- to 14-flowered raceme, about 2 mm long, borne by an erect, slender peduncle 7-8 mm long, emerging laterally from the ramicaul; floral bracts loose, imbricating, oblique, 1 mm long; pedicels 2 mm long; ovary 0.5 mm long; **sepals** translucent yellow, glabrous, broadly ovate-suborbicular, concave, obtuse, the dorsal sepal 1.4 mm long, 1.2 mm wide, the lateral sepals free to the base, 1.2 mm long, 1.2 mm wide; **petals** translucent yellow, glabrous, broadly elliptical, obtuse, 1 mm long, 0.8 mm wide; **lip** red, thick, cellular-glandular, ovate-triangular, 2 mm long, 1 mm wide, the apex yellow, acute, curved up, pubescent, the base rounded, with a small glenion, attached to the column-foot; **column** cucullate, 0.4 mm long, 0.8 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Chocó: Bahía Solano, Quebrada Resaquita, frente a Macana, collected by G. Misas, *R. Escobar 1857* (Holotype: COL); flowered in cultivation by M. & O. Robledo at La Ceja, 13 Oct. 1977, *C. Luer 2025* (SEL).

This species, *P. ortiziana* and *P. umbellata* are the only species known in the genus with an umbellate inflorescence. The umbel of *P. dasyglossa* is composed of several, overlapping, very small, simultaneous flowers. The apex of the lip is pubescent, pointed and curved upward.

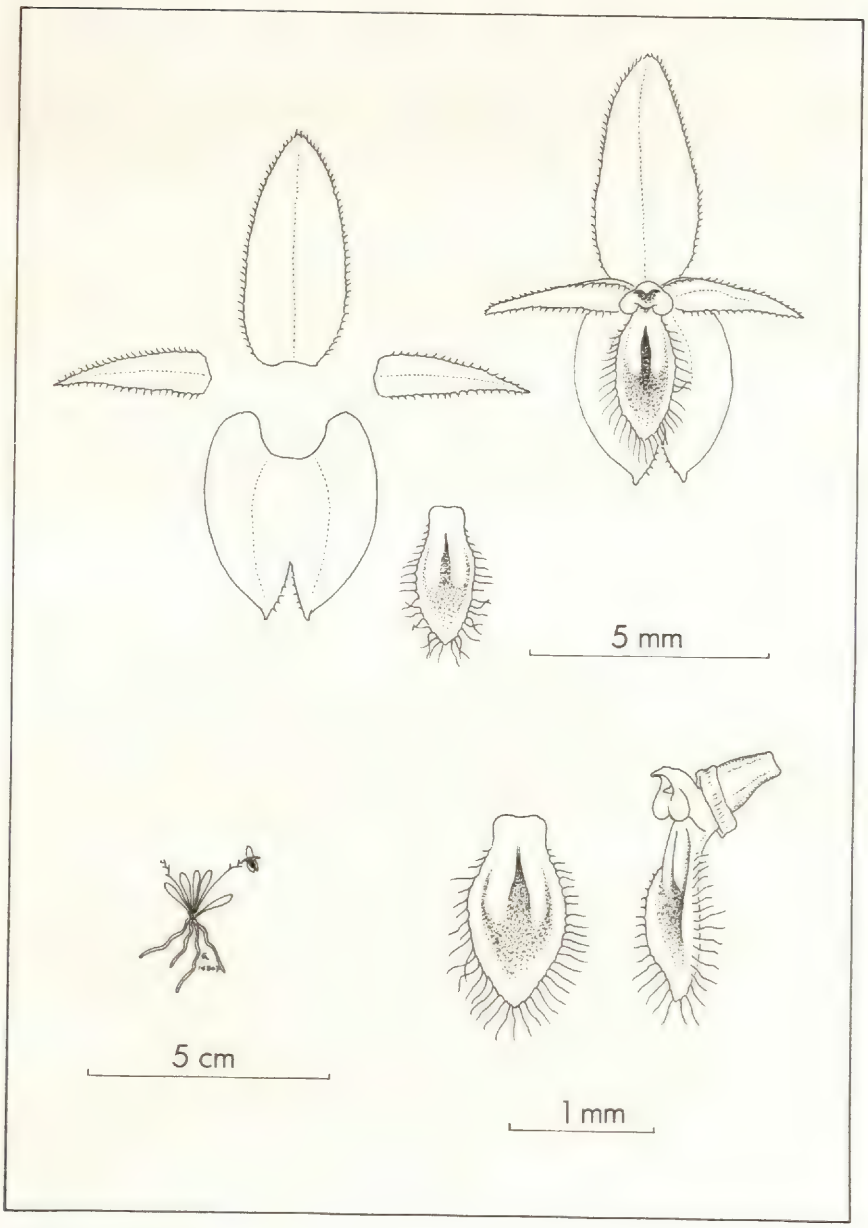

Plate 13. *Platystele crinita* Luer & Hirtz

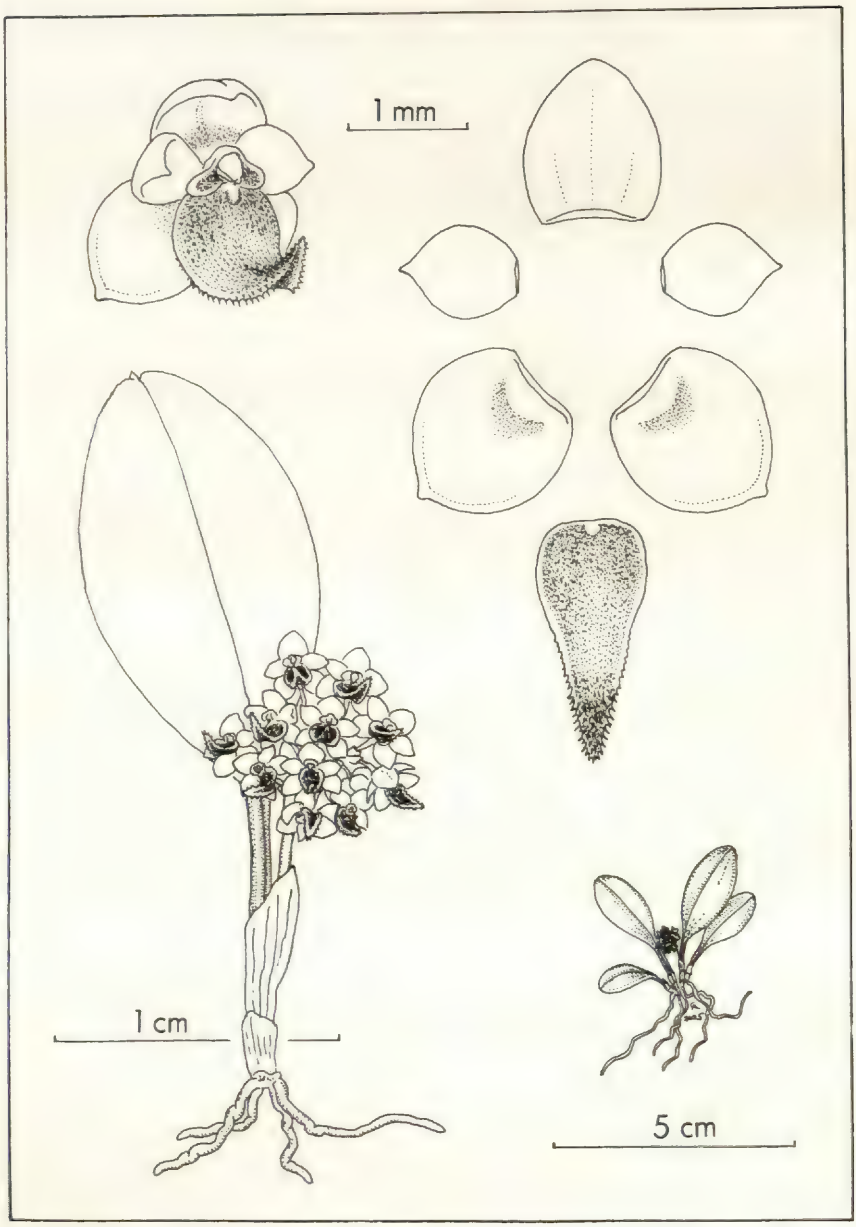

Plate 14. *Platystele dasyglossa* P. Ortiz

Platystele densiflora P. Ortiz, Orquideología 12: 140, 1977.

Ety.: From the Latin *densiflorus*, "densely flowered," referring to the inflorescence.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-12 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 2.5-6 cm long including the petiole 1-2 mm long, the blade elliptical-obovate, subacute, 0.6-1.1 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a strict, congested, successively many-flowered raceme with several to many flowers open simultaneously, up to 45 cm long including the erect, slender peduncle 6-8 cm long, emerging from the ramicaul; floral bracts loose, oblique, 2 mm long; pedicels 1.5 mm long; ovary papillose, 0.5 mm long; **sepals** translucent rose to yellow, glabrous, ovate, acute, slightly acuminate, the dorsal sepal 2.5 mm long, 1.5 mm wide, 1-veined, the lateral sepals oblique, free to the base, 2.75 mm long, 1 mm wide; **petals** translucent rose to yellow, glabrous, narrowly ovate, acute, 2 mm long, 0.8 mm wide; **lip** red, thick, cellular-glandular, elliptical with the apex rounded, 1.3 mm long, 1 mm wide, lightly concave centrally, the base truncate, with a glenion, attached to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Munic. of Cocorná, Quebrada Guarino, alt. 1900 m, Nov. 1976, *P. Ortiz 909* (Holotype: COL); same locality, R. Escobar 1030, flowered in cultivation by M. & O. Robledo, 9 Oct. 1977, *C. Luer 1957* (SEL); same area, alt. 1600 m, 24 Apr. 1983, *C. Luer, J. Luer, R. Escobar, A. Pridgeon & M. Webb 8779* (SEL); same area, Quebrada La Hundida, alt. 1700 m, 20 Mar. 1989, *C. Luer, J. Luer, R. Escobar & W. Teague 14323* (MO).

This vigorous species is locally abundant in one area of the Central Cordillera of Colombia. The inflorescence is very densely flowered, producing a compact cylinder of many flowers at the apex of a tall, slender raceme. The raceme remains in flower for a long period of time; as the lower flowers slowly fade those above mature. The simple sepals and petals may be either purple or yellow, while the round lip is usually red.

Platystele dodsonii Luer, Selbyana 5: 155, 1979.

Ety.: Named in honor of Dr. Calaway H. Dodson, author and investigator of the Orchidaceae, who first discovered this species.

Plant very small, epiphytic, densely caespitose; roots fleshy. Ramicauls erect, slender, 2-4 mm long, enclosed by 2-3 thin, imbricating sheaths. **Leaf** erect, coriaceous, 10-18 mm long including a petiole 2-5 mm long, the blade narrowly elliptical-obovate, subacute, 2-3 mm wide, gradually narrowed below into the petiole. **Inflorescence** a weak, erect, loose, flexuous, distichous, successively several-flowered raceme with several flowers open simultaneously, up to 35 mm long including the filiform peduncle 1-1.5 cm long, from the ramicaul; floral bracts thin, inflated, 0.5-1 mm long; pedicels 1.5-3 mm long; ovary 0.5 mm long; **sepals** translucent light tan, more or less mottled with purplish tan, glabrous, ovate and concave below the middle, subacute, the apices contracted into slender tails, the dorsal sepal 2-2.5 mm long, 0.6-0.75 mm wide, the lateral sepals oblique, 1.75-2.5 mm long, 0.6-0.75 mm wide, free to the base; **petals** translucent tan, glabrous, narrowly linear, acute, 1.8 mm long, 0.2 mm wide; **lip** purple-brown, cellular-glandular, ovate below the middle, with the subacute apex acuminate, 1 mm long, 0.5 mm wide, the base subtruncate with a low, transverse callus, fixed to the column-foot; **column** cucullate, 0.3 mm long, 0.6 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Zamora-Chinchipe: epiphytic in cloud forest between Loja and Zamora, alt. 2800 m, 18 Sept. 1961, *C. H. Dodson & L. B. Thien 665A* (Holotype: SEL; Isotype: MO); same area, 30 July 1975, *C. Luer, G. Luer & S. Wilhelm 500A* (SEL); same area, 21 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10731* (MO); cloud forest above Valladolid, alt. 2700 m, 23 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10826* (MO).

This tiny species grows in the deep moss covering the small branches of scrubby trees in the cold, windswept passes and paramos of southern Ecuador. It is identified by the minute raceme of several, simultaneous, reddish purple flowers, which are basically similar to those of *P. oxyglossa*.

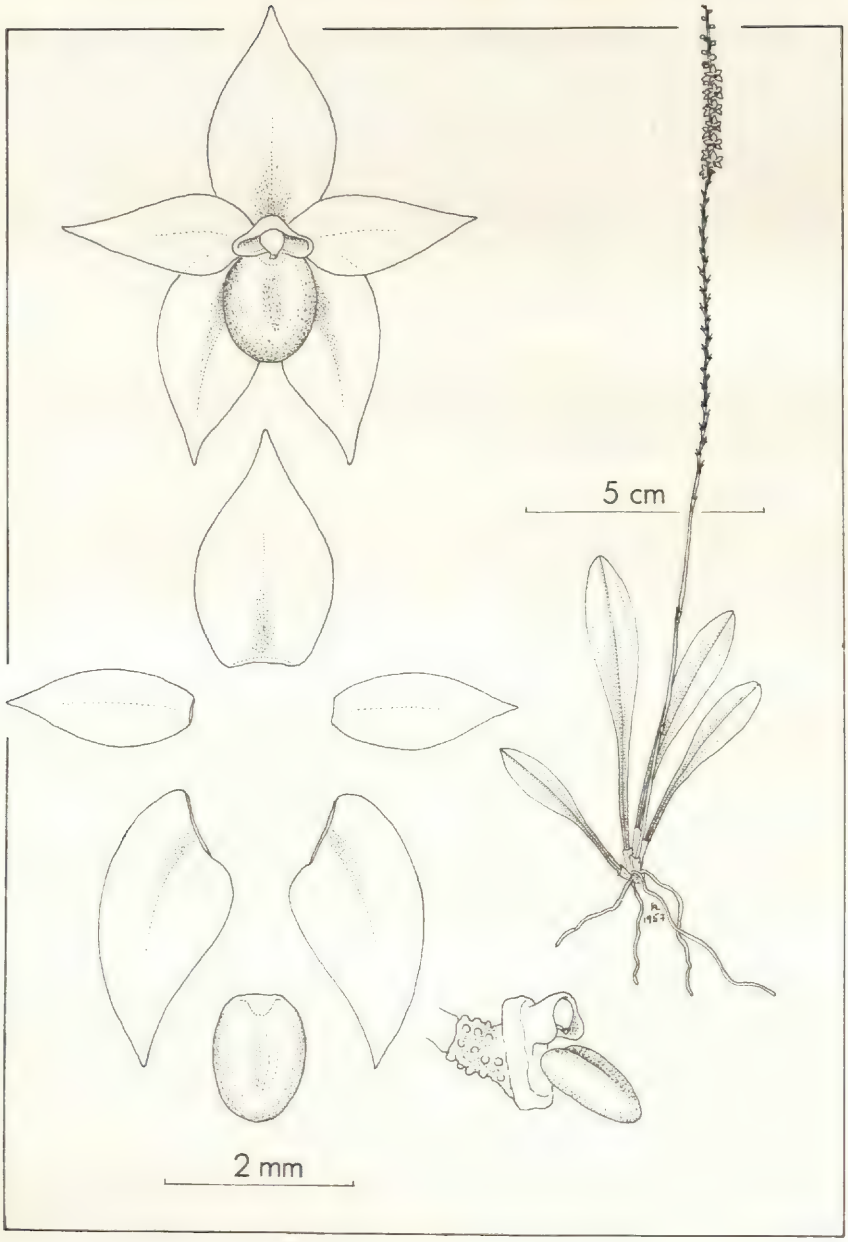

Plate 15. *Platystele densiflora* P. Ortiz

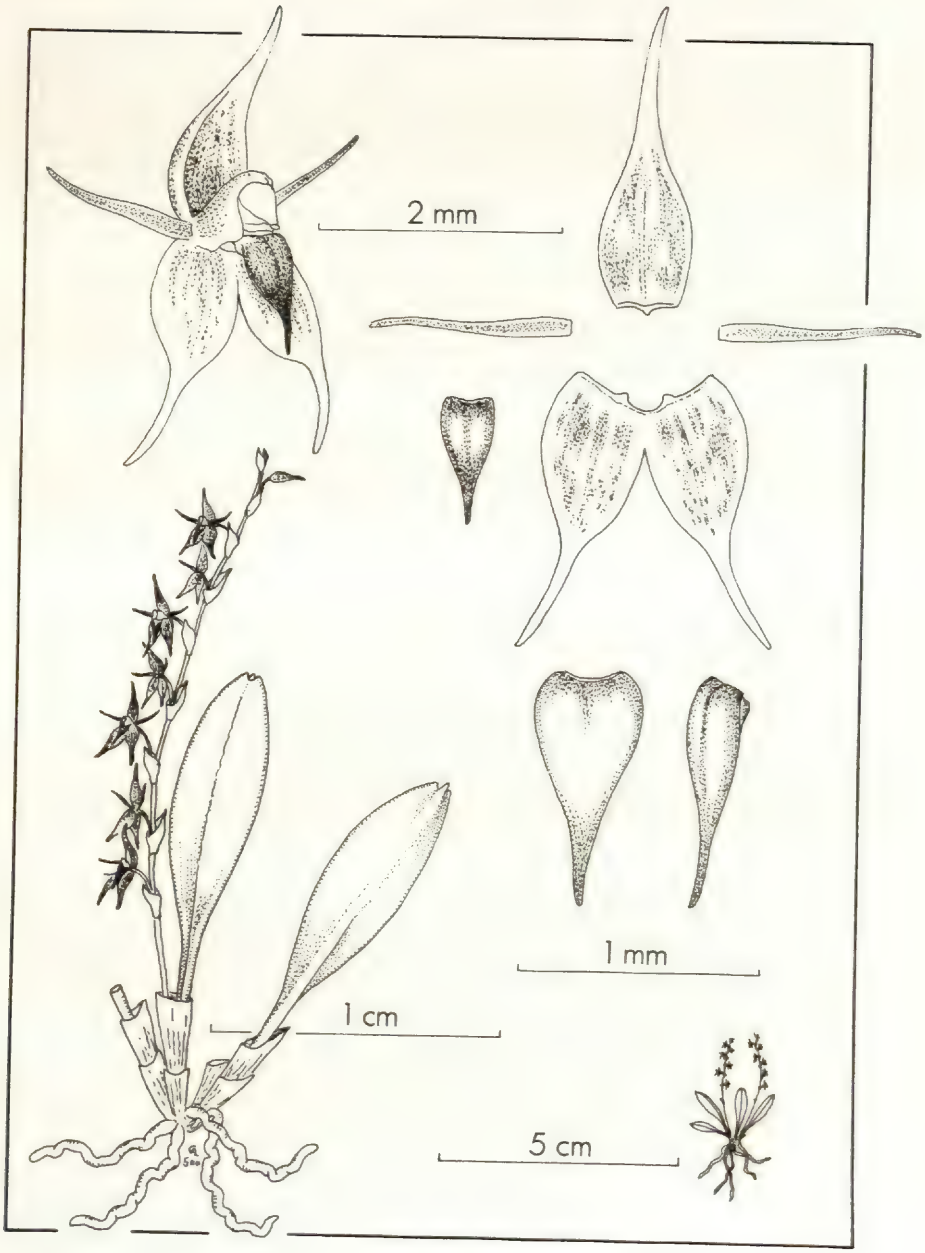

Plate 16. *Platystele dodsonii* Luer

Platystele dressleri Luer, Selbyana 3: 26, 1976.

Ety.: Named in honor of Dr. Robert L. Dressler, author and investigator of the Orchidaceae, who first discovered this species.

Plant small, epiphytic, caespitose; roots fleshy. Ramicauls erect, slender, 2-10 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 13-25 mm long, the blade elliptical-obovate, obtuse, 4-11 mm wide, cuneate below into the subpetiolate base. **Inflorescence** an erect, congested, secund, successively several- to many-flowered raceme up to 13 cm long including the slender peduncle 5-7 mm long, from near the apex of the ramicaul; floral bracts oblique, 0.5-1 mm long; pedicels 1.5-2 mm long; ovary 0.75 mm long; **sepals** light green, glabrous or microscopically ciliate, ovate, subacute to obtuse, the dorsal sepal concave, 1.25-2 mm long, 1-1.2 mm wide, 1-veined, the lateral sepals oblique, 1.25-1.5 mm long, 1-1.2 mm wide, free to the base; **petals** translucent green, narrowly ovate, acute, ciliate, 1-1.5 mm long, 0.3-0.5 mm wide; **lip** purple-black, ovate, obtuse, ciliate, 1 mm long, 0.8-1 mm wide, the base truncate, attached to the column-foot; **column** cucullate, 0.75 mm long and broad, the stigma bilobed, the foot rudimentary.

PANAMA: Prov. of Panamá: epiphytic along the Altos de Pacora road, alt. 650 m, 4 Mar. 1976, *C. Luer, J. Luer, R. L. Dressler & P. Taylor 963* (Holotype: SEL); same area, *R. L. Dressler 4684* (SEL).

Platystele dressleri is known only from eastern Panama. It is related to the Colombian *P. argentosa*. Both species are distinguished by the small flowers borne successively in a congested raceme. The inflorescence, shorter than the leaf, ascends within the fold of the petiole of the relatively broad leaf. The sepals are obtuse, the petals are ciliate, and the purple-black lip is ciliate, ovate, and obtuse without the basal lobes and incurved apex that are seen in *P. argentosa*.

Platystele edmundoi Pabst, Anais 14 Congr. Soc. Bot. Brasil 16, 1964.

Ety.: Named in honor of the discoverer of the species, Edmundo Pereiro.

Plant medium to large in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-14 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 2-7 cm long including a petiole 0.5-2 cm long, the blade elliptical-obovate, subacute to obtuse, 0.5-1.2 cm wide, cuneate below into the slender petiole. **Inflorescence** an erect, subdense, simultaneously many-flowered raceme 3-10 cm long including the slender peduncle 2-5 cm long, emerging laterally from the ramicaul; floral bracts thin, inflated, 1 mm long; pedicels 1-1.5 mm long; ovary 0.75 mm long; **sepals** and petals greenish, glabrous, the dorsal sepal narrowly ovate, acute, 1.75-2.25 mm long, 0.75-1 mm wide, 1-veined, the lateral sepals similar, more or less parallel, 1.75-2 mm long, connate up to near the middle, 1.25-1.5 mm wide together, each 1-veined; **petals** oblong-obovate, oblique, acute, 1.75-2 mm long, 0.5 mm wide; **lip** microscopically cellular-glandular, oblong, obtuse, 0.8 mm long, 0.4 mm wide, the base subtruncate, featureless, fixed to the column-foot; **column** cucullate, 0.25 mm long and broad, the stigma bilobed, the foot rudimentary.

BRAZIL: Edo. do Pará: Serro do Cachimbo, sul do Pará, 16 Sept. 1955, *E. Pereira 1806* (Holotype: RB; Isotype: HB), C. Luer illustr. 14704.

This species was first discovered by Edmundo Pereira in the low mountains in the southern part of Pará on the edge of the Amazonian basin, an area relatively poor in pleurothallids. Numerous tiny, green flowers are produced simultaneously in a slender, slightly crowded inflorescence. The floral parts are basically very simple without a distinguishing feature.

Platystele edmundoi is similar to *P. viridis*, but the floral parts of the latter are twice the dimensions and the lip is provided with a large, conspicuous glenion. *Platystele edmundoi* is most similar to *P. schmidtchenii*, but the sepals and petals of the latter are acute and acuminate.

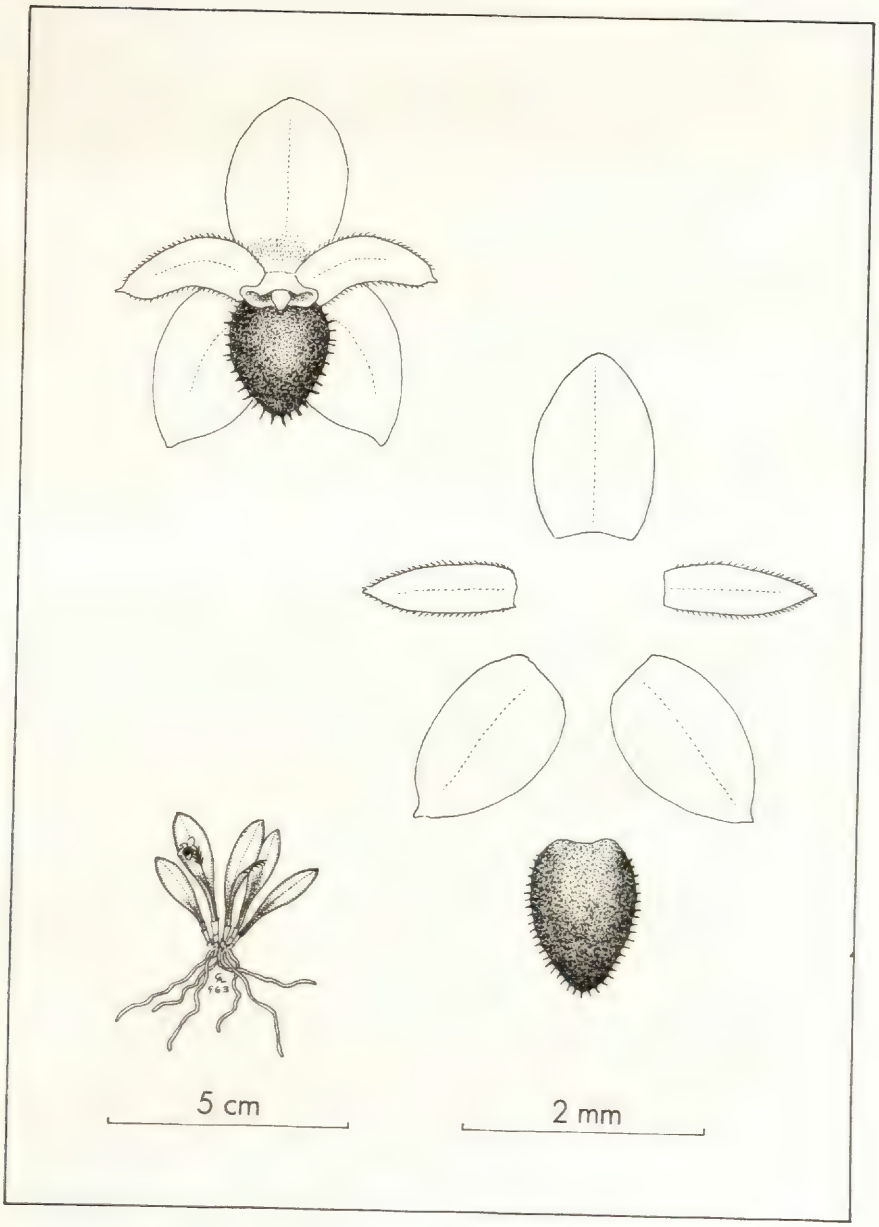

Plate 17. *Platystele dressleri* Luer

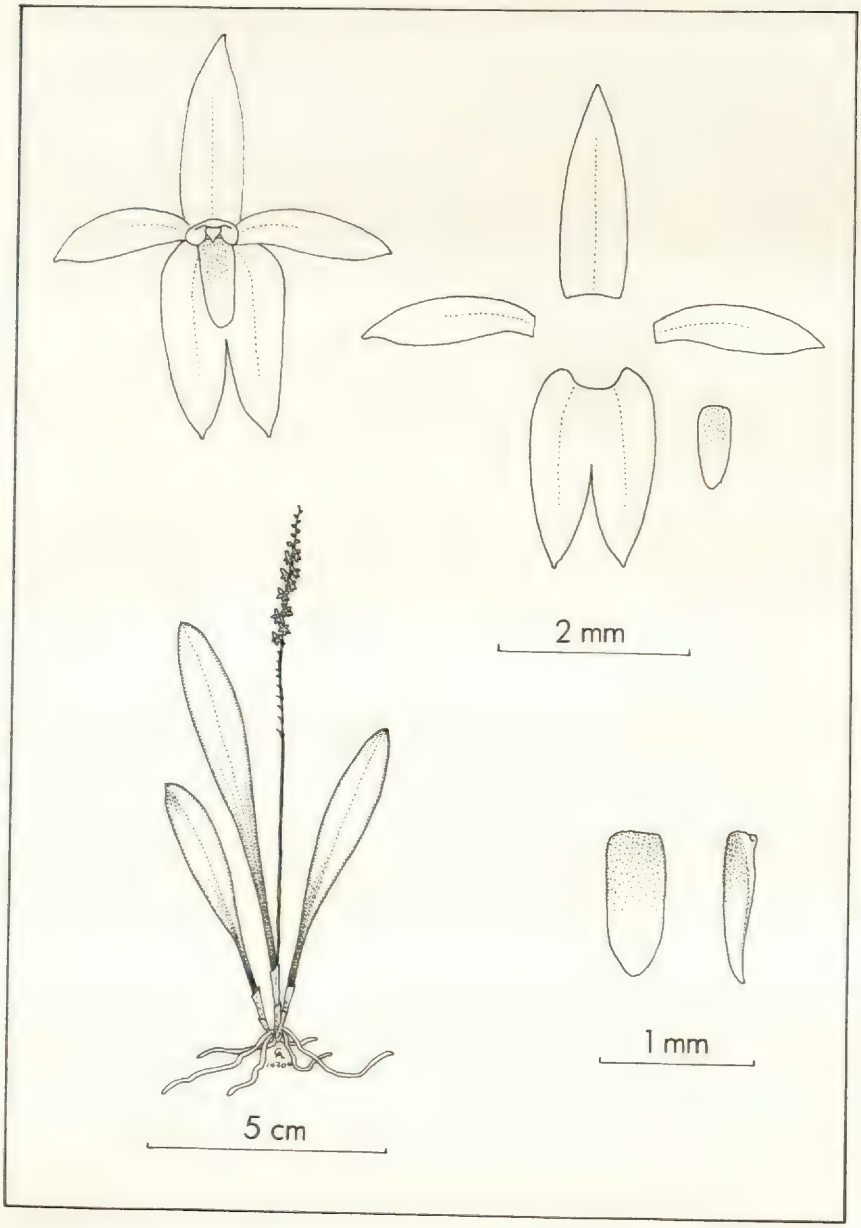

Plate 18. *Platystele edmundoi* Pabst

Platystele enervis Luer, Phytologia 55: 200, 1984.

Ety.: From the Latin *enervis*, "without a nerve," referring to the nerveless sepals and petals.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-8 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 10-21 mm long including a petiole 4-8 mm long, the blade narrowly elliptical-obovate, subacute, 3-6 mm wide, narrowly cuneate below into the petiole. **Inflorescence** a weak, loose, suberect, distichous, flexuous, successively many-flowered raceme up to 13 cm long including the filiform peduncle 1.5-3 cm long, emerging laterally from high on the ramicaul; floral bracts thin, 0.5 mm long; pedicels 1-2 mm long; ovary 0.25 mm long; **sepals** translucent purplish or greenish, colorless toward the apices, glabrous, with a faint or invisible vein, the dorsal sepal ovate, acute, 0.8-0.9 mm long, 0.4-0.5 mm wide, the lateral sepals broadly ovate, obtuse, abruptly acuminate, oblique, 0.6-0.8 mm long, 0.4-0.5 mm wide, free to the base; **petals** translucent, narrowly linear, acute, 0.6-0.8 mm long, 0.1 mm wide; **lip** purple or brown, cellular-pubescent, ovate, flat, acute, shortly acuminate, with the apex inflexed, 0.6-0.75 mm long, 0.4-0.5 mm wide, the base rounded, fixed to the column-foot; **column** thinly cucullate, 0.4 mm long, 0.4 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Pichincha: epiphytic in cloud forest near Los Faisanes, alt. ca. 2000 m, 15 July 1983, *A. Hirtz 1009* (Holotype: SEL), C. Luer illustr. 9164; between Chiriboga and Santo Domingo, alt. 1650 m, 31 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9845* (MO). Without locality, collected by Tineke Mulder, flowered in cultivation in Wageningen, Holland, 4 Sept. 1987, *C. Luer 12939A* (MO).

This tiny species, apparently endemic in central, western Ecuador, is notable for the extremely small size of the flowers. They are smaller than those of the famous *P. jungermannioides*, and so small that the minute, ovate sepals and petals seem to lack a midvein. *Platystele enervis* is related to the variable and seemingly ubiquitous *P. oxyglossa* complex, but *P. enervis* is distinguished by the minute flowers with sepals less than one millimeter long, and produced successively in a long, weak, hairlike raceme. As many as three flowers are sometimes open simultaneously.

Platystele examen-culicum Luer, Selbyana 3: 28, 1976.

Ety.: From the Latin *examen culicum*, "a swarm of mosquitoes," in allusion to the appearance of the flowering plant.

Syn.: *Platystele culex* Luer & Escobar, Phytologia 49: 198, 1981.

Ety.: From the Latin *culex*, "a mosquito," in allusion to the appearance of the flower.

Plant small to very small, epiphytic to lithophytic, shortly repent and densely caespitose; roots slender. Ramicauls erect to suberect, slender, 3-10 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 5-40 mm long including a petiole 3-20 mm long, the blade narrowly elliptical-obovate, subacute to obtuse, 2-11 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect to suberect, loose, distichous, flexuous, successively few- to many-flowered raceme 6-15 cm long including the slender peduncle 1.5-3 cm long, emerging laterally from the ramicaul; floral bracts oblique, 1.5-1 mm long; pedicels 3-10 mm long; ovary 0.5-0.75 mm long; **sepals** translucent pale rose, pale yellow, dull green or gray, or tan mottled with darker brown, glabrous, the dorsal sepal narrowly ovate to linear-triangular, acute, acuminate, long-attenuate, 3-7 mm long, 0.5-0.8 mm wide, the lateral sepals narrowly ovate, oblique, acute, long-attenuate, 3-7 mm long, 0.75-1.2 mm wide, free to the base; **petals** similarly colored, more or less microscopically cellular-ciliate, narrowly linear to linear-ovate, acute, 3-5 mm long, 0.2-0.4 mm wide; **lip** rose, purple, or brown, cellular-glandular, ovate in the lower third, with the apex acute, acuminate, long-attenuate, 2-3 mm long, 0.5-1 mm wide, the distal third often angled upward, the base subtruncate with a small glenion, fixed to the column-foot; **column** cucullate, 0.5-0.75 mm long, up to 1 mm broad, the stigma bilobed, the foot rudimentary.

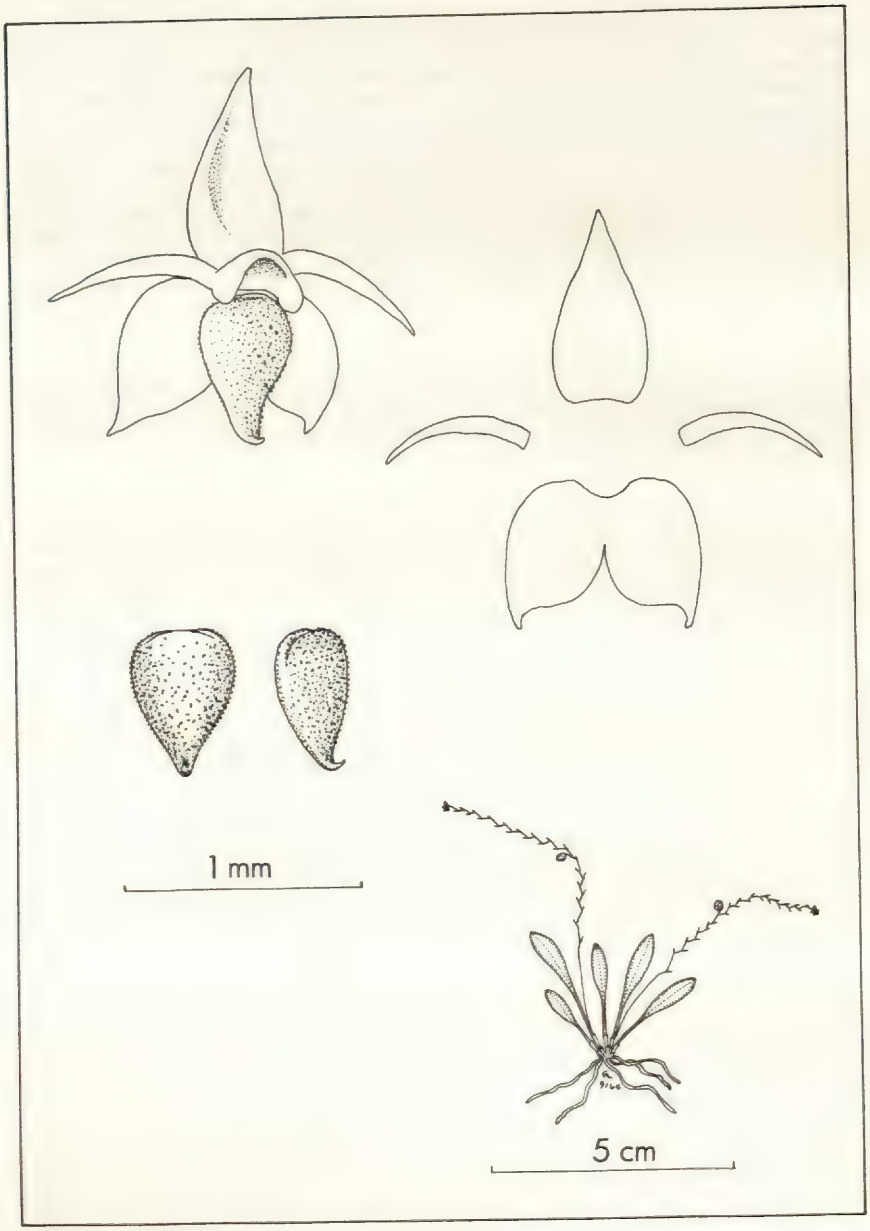

Plate 19. *Platystele enervis* Luer

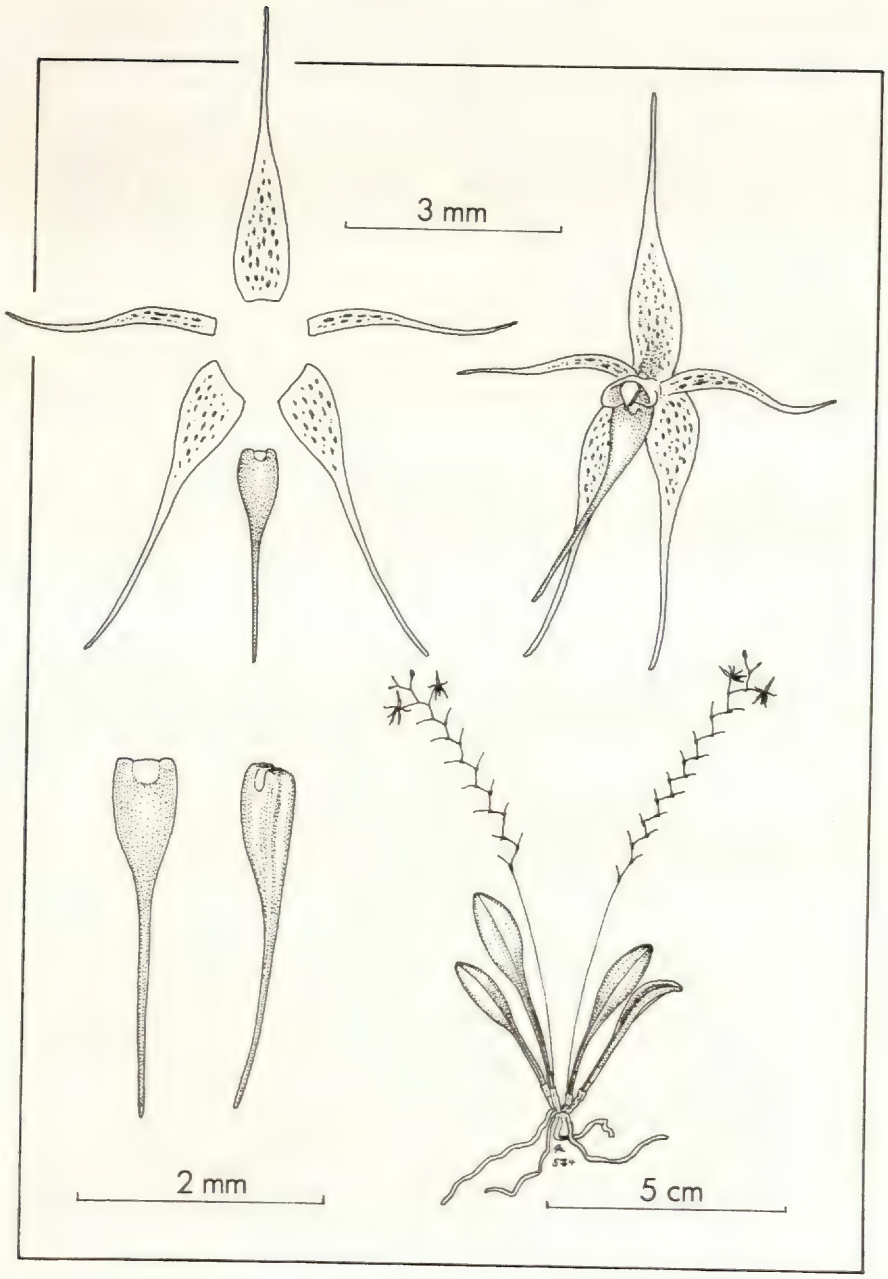

Plate 20. *Platystele examen-culicum* Luer

ECUADOR: Prov. of Pichincha: lithophytic along the new road between Quito and Santo Domingo, alt. ca. 1800 m, 19 Aug. 1975, *C. Luer, G. Luer & S. Wilhelm 574* (Holotype: SEL); same area, epiphytic in forest, alt. 2100 m, 31 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9821* (MO). Prov. of Carchi: epiphytic in cloud forest above Maldonado, alt. 2050 m, 4 Apr. 1984, *C. Luer, S. Dalström & T. Höijer 9923* (MO).
COLOMBIA: Dept. of Antioquia: Munic. of Yarumal, epiphytic in cloud forest north of Yarumal, alt. 2700 m, 1 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10084* (MO); forest remnant north of Santa Rosa de Osa, alt. 2580 m, 14 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14145* (MO); above El Cedro, alt. 1650 m, 15 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14170* (MO); Munic. of Urrao, flowered in cultivation by Dr. R. Londoño near Medellín, 20 Mar. 1989, *C. Luer 14307* (MO). Dept. of Cundinamarca: Quebrada San Roque, Río Blanco Valley, 10 Km west of Gutierrez, alt. 2725 m, 27 July 1944, *M. Grant 9737* (US); ridge above upper San Antonio, Río San Martín Valley, 50 Km southeast of Gutierrez, alt. 2475 m, 2 Aug. 1944, *M. Grant 9797* (US). Dept. of Santander: epiphytic in cloud forest west of Velez, alt. 2000 m, 5 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10138* (MO). without locality or collector, flowered in cultivation by M. & O. Robledo at La Ceja, 23 Jan. 1978, *C. Luer 2313* (type of *P. culex*: SEL).
PERU: Dept. of Amazonas: Vilcaniza, alt. 1500 m, collected by C. Head, flowered in cultivation by J. & L. Orchids, Easton, CT., *C. Luer 13813* (MO).

This little species is variable in the dimensions of the leaves and flowers in its wide range through the Andes. It is allied to the even more widely distributed *P. oxyglossa*, but the longer, narrower, long-attenuate floral parts, especially the long-subulate lip, distinguish *P. examen-culicum*.

A vegetatively robust but small-flowered Ecuadorian form with brownish-mottled sepals 3 mm long was the first described. A form from Colombia vegetatively half the size but with pedicels and translucent greenish sepals more than twice as long, and with the subulate apex of the lip angled upward in the distal third, was described as *P. culex*. Since that time numerous collections have been examined, and all combinations of the above characters have been found to exist.

Platystele filamentosa Luer, sp. nov.

Ety.: From the Latin *filamentosus*, "filamentous," referring to the petals.

Planta parva caespitosa, inflorescentia laxe racemosa foliis petiolatis longiore, sepalis ovatis obtusis concavis, petalis filamentosis, labello grandi elliptico subacuto convexo.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2-3 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 8-15 mm long including a petiole 3-6 mm long, the blade elliptical-obovate, subacute, 3-4 mm wide, narrowly cuneate below into the slender petiole. **Inflorescence** a weak, erect, distichous, distantly and successively several-flowered raceme up to 6 cm long including the filiform peduncle 2-2.5 cm long, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 2-3 mm long; ovary 0.5 mm long; **sepals** translucent yellow, ovate, concave, 1-veined, subacute to obtuse, the dorsal sepal 1.5 mm long, 1 mm wide expanded, the lateral sepals oblique, 1.3 mm long, 0.8 m wide, free to the base; **petals** yellow, narrowly linear, filiform, acute, 1.2 mm long, 0.03 mm wide; **lip** red, elliptical, subacute, convex, 1.5 mm long, 1 mm wide, narrowed above the truncate base, with a minute, basal glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long and broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Nariño: collected near Ricaurte, flowered in cultivation at La Planada Science Center, 21 July 1989, *C. H. Dodson, R. Escobar & E. Valencia 18051* (Holotype: MO), C. Luer illustr. 14553.

The flower of this species seems to be most closely similar to a that of *Platystele acutilingua*. Both are very small with obtuse, concave sepals and filiform petals. The lip of *P. acutilingua* is exceedingly long-attenuate, much

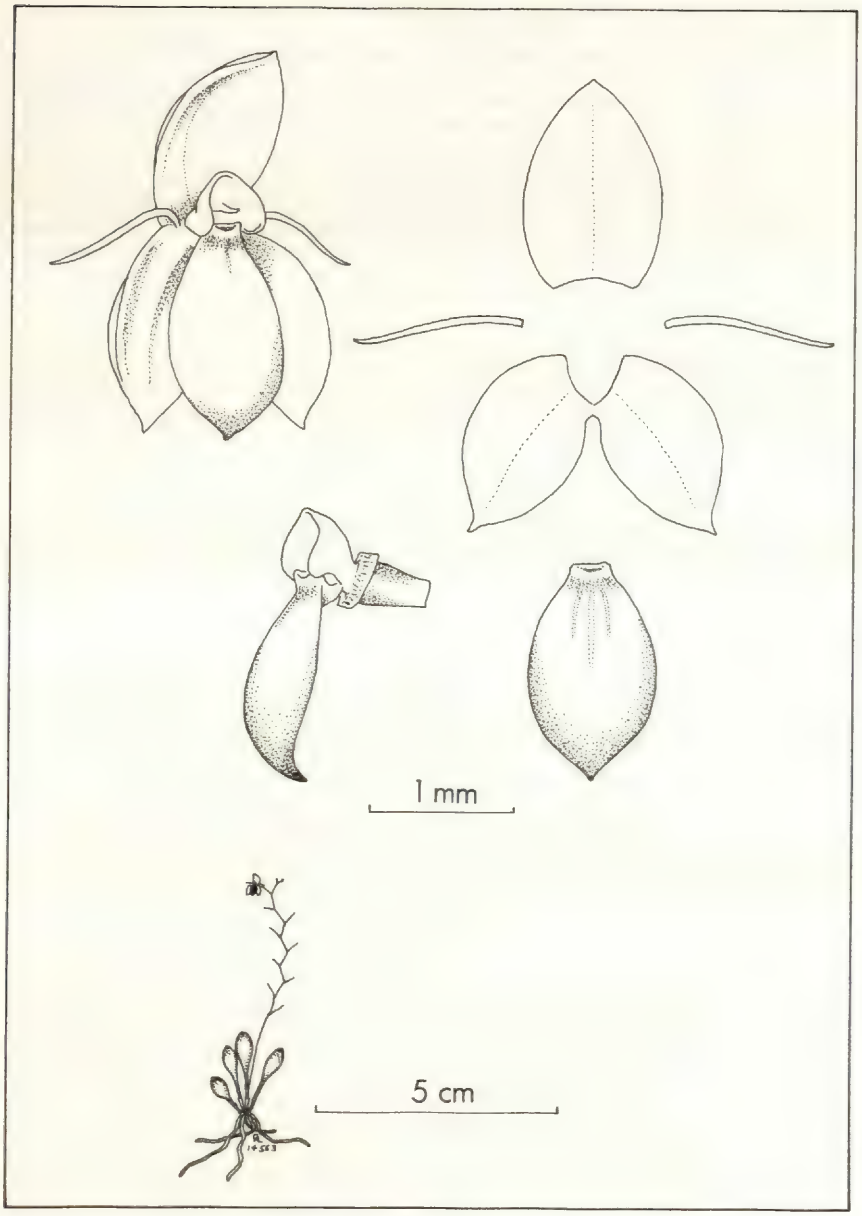

Plate 21. *Platystele filamentosa* Luer

longer than the sepals, while that of *P. filamentosa* is larger than the sepals, but subacute and convex. *Platystele filamentosa* is presently known only from the area around the La Planada Science Center above Ricaurte in southwestern Colombia.

Platystele fimbriata Luer & Hirtz, sp. nov.

Ety.: From the Latin *fimbriatus*, "fimbriate," referring to the sepals and petals.

Planta parvula caespitosa, inflorescentia racemosa foliis ellipticis petiolatis duplo longiore, sepalis late ovatis obtusis fimbriatis, petalis late ovatis acutis fimbriatis, la-bello crasso carnoso obovoideo obtuso.

Plant minute, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-2 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 6-10 mm long including a petiole 2-3 mm long, the blade elliptical, subacute to obtuse, 2.5-3 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect to suberect, loose, distichous, subflexuous, successively several-flowered raceme to 7 mm long, borne by a filiform peduncle 15-17 mm long, from the ramicaul; floral bracts oblique, 0.75 mm long; pedicels 2-2.5 mm long; ovary 0.25 mm long; **sepals** translucent rose to light brown, glabrous, the dorsal sepal broadly ovate, concave, obtuse, the margins long-fimbriate, 2.25 mm long, 2.25 mm wide, 3-veined, the lateral sepals ovate, oblique, subacute, only shortly ciliate on the outer margins, long-fimbriate on the inner margins, 1.75 mm long, 1.15 mm wide, 1-veined, connate 1 mm; **petals** translucent light rose to light brown, broadly ovate, oblique, acute, acuminate, 1.5 mm long, 1 mm wide; **lip** red to red-brown, thick, fleshy, obovoid, with the apex obtuse, slightly recurved, 1.25 mm long, 1 mm wide, 0.75 mm thick, the base truncate with a small glenion, fixed to the column-foot; **column** shallowly cucullate, 0.5 mm long and broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Esmeraldas: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C. H. Dodson, D. Benzing & D. Bermudes 12384* (Holotype: MO); same area, *C. Luer et al. 12380* (MO).

This species, *P. resimula*, and *P. rhinocera* have very similar, thick, obovoid lips with an incurved apex, but the sepals and petals differ markedly. *Platystele fimbriata* is distinguished by the broadly ovate, obtuse, long-fimbriate dorsal sepal with three incomplete veins; semiconnate, shortly ciliate lateral sepals; and broad, shortly acuminate, long-fimbriate petals.

Platystele gyroglossa Luer, Selbyana 3: 228, 1977.

Ety.: From the Greek *gyroglossa*, "a round tongue," referring to the shape of the lip.

Syn.: *Platystele porphyroglossa* P. Ortiz, Orquideología 14: 216, 1981.
Ety.: From the Greek *porphyroglossa*, "a purple tongue," referring to the color of the lip.

Plant medium to large for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-12 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 3-9 cm long including a petiole 1-2 cm long, the blade elliptical-obovate, subacute to obtuse, 1-1.5 cm wide, cuneate below into the petiole. **Inflorescence** an erect, subdense, distichous, successively many-flowered raceme up to 3 cm long borne by a peduncle 4-5 cm long, producing 5-10 flowers simultaneously, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 1.5-2.5 mm long; ovary 0.5-1 mm long; **sepals** translucent pale yellow, suffused with rose centrally, glabrous, the dorsal sepal ovate, subacute to obtuse, glabrous, subcarinate, 2-2.5 mm long, 1.3 mm wide, the lateral sepals ovate, oblique, subacute, 2-2.5 mm long, 1-1.3 mm wide, free to the base; **petals** elliptical, acute, glabrous, 2-2.3 mm long, 0.8-1 mm wide; **lip** red-purple, cellular-glandular, suborbicular to broadly elliptical, 1.6 mm long, 1.2 mm wide, the apex round, the base with a minute glenion, concave on the end, fixed to the column-foot; **column** cucullate, 1 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Tungurahua: epiphytic in old guava trees between Baños and Río Negro, alt. ca. 1800 m, 13 Mar. 1975, *C. Luer & R. Kent 208* (Holotype: SEL). Prov. of Morona-Santiago: slopes east of Cuenca, collected by Fred Fuchs, Jr., flowered in cultivation 1973, *C. Luer s.n.* (SEL). Prov. of Napo: Río Topo, alt. 1300 m, Mar. 1984, *A. Hirtz 1614* (MO).
COLOMBIA: Intend. of Putumayo: Mocoa, obtained by R. Escobar, No. 1832, flowered in cultivation Apr. 1978, *P. Ortiz 971* (COL, type of *P. porphyroglossa*); flowered in cultivation 20 Jan. 1978, *C. Luer 2334* (SEL).

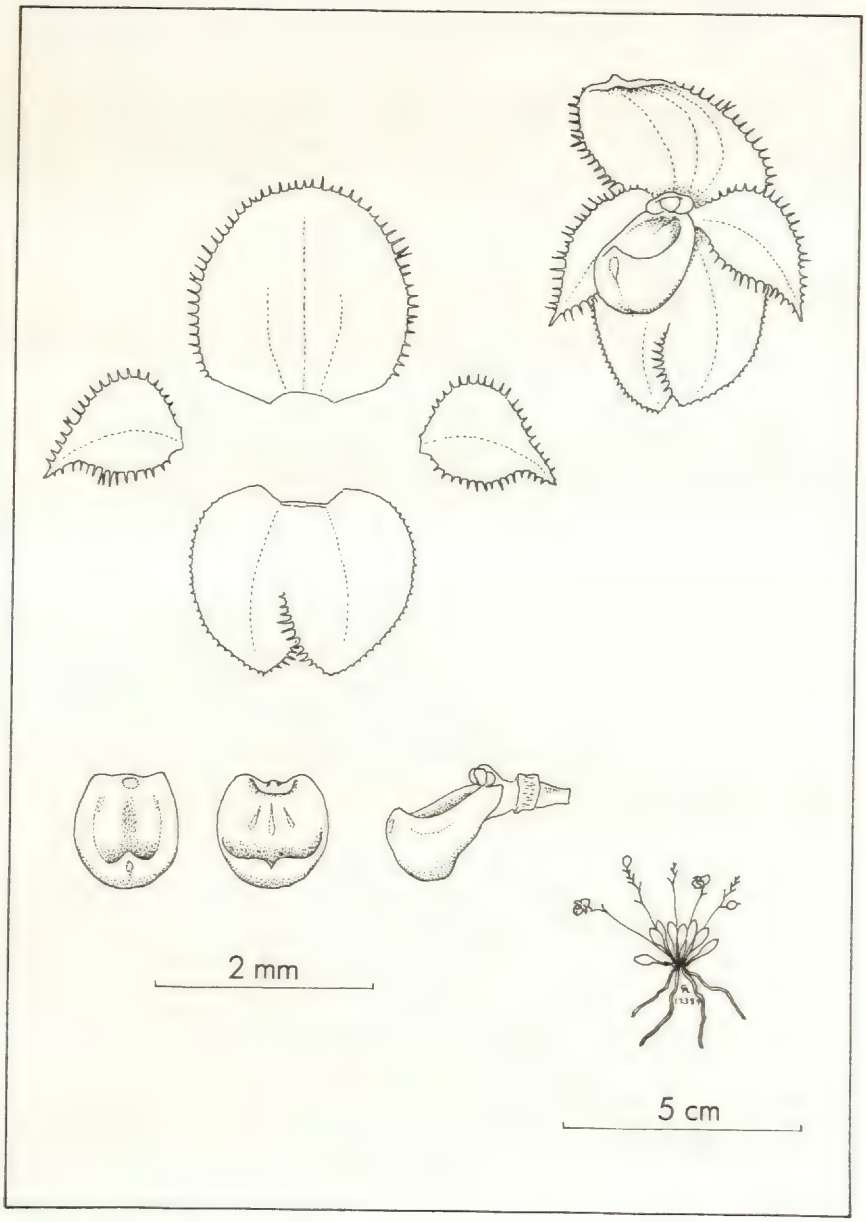

Plate 22. *Platystele fimbriata* Luer & Hirtz

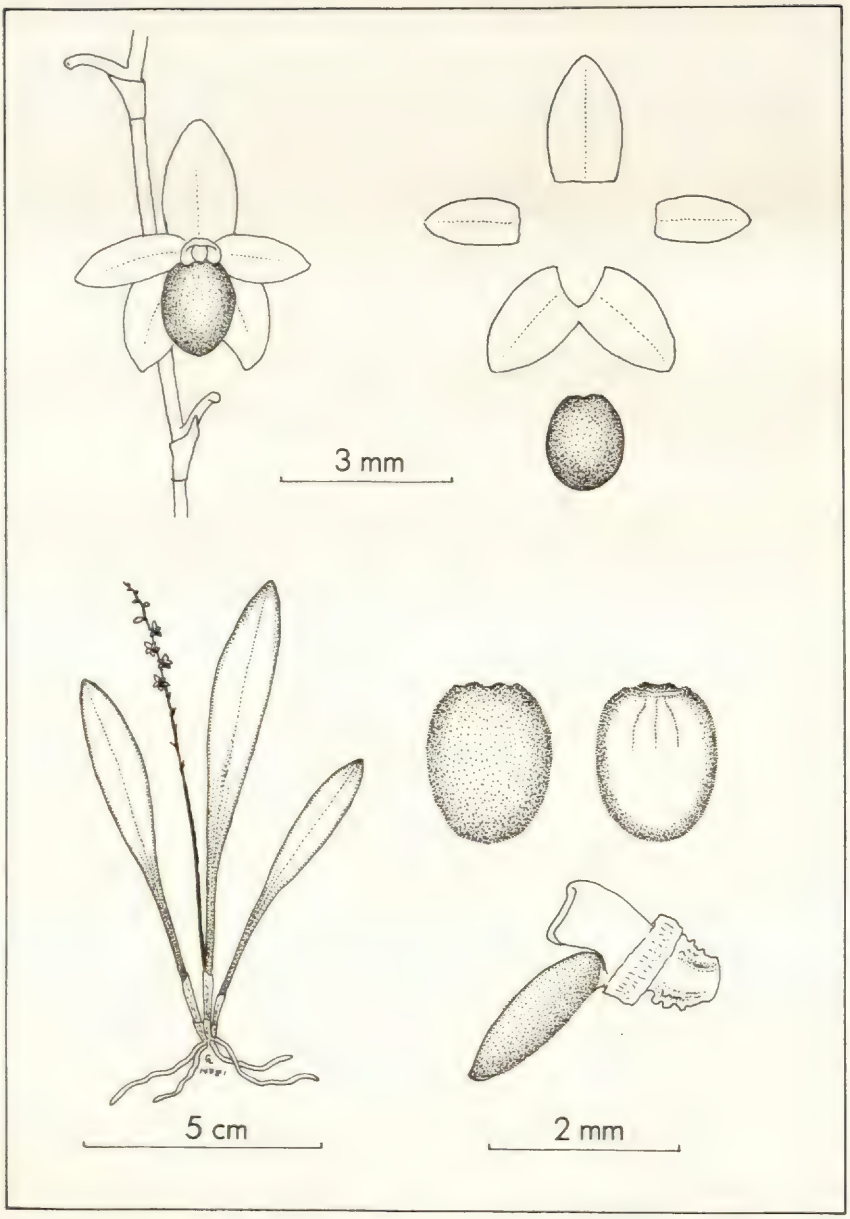

Plate 23. *Platystele gyroglossa* Luer

This species is found occasionally on the eastern declivity of the Andes of Ecuador and southern Colombia. Although not formally described until recently, a colored painting by an unsigned artist (possibly Lehmann) that probably represents this species is in Reichenbach's herbarium at W (Vienna) with his intended name "stellata."

Vegetatively *P. gyroglossa* is relatively large. The inflorescence produces most of the flowers simultaneously in a raceme that usually does not greatly surpass the leaf. The sepals and petals are yellow and simply ovate, and the deep purple lip, about as large as the lateral sepals, is suborbicular. *Platystele gyroglossa* is similar to the smaller, Central American *P. ovatilabia*.

Platystele hirtzii Luer, Selbyana 5: 155, 1979.

Ety.: Named in honor of Alexander C. Hirtz of Quito, Ecuador, who discovered this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-10 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 3-4 cm long including a petiole 1-1.5 cm long, the blade narrowly elliptical-obovate, subacute, 0.6-0.8 mm wide, narrowly cuneate below into the petiole. **Inflorescence** a weak, suberect, distantly and successively few-flowered raceme up to 7 cm long including the filiform peduncle 3-4 cm long, emerging laterally from the ramicaul; floral bracts thin, 1.5 mm long; pedicels 4-6 mm long; ovary 1 mm long; **sepals** translucent pale lavender with purple midveins, glabrous, narrowly ovate, acute, long-acuminate, the dorsal sepal 13 mm long, 1.5 mm wide, the lateral sepals similar, oblique, sub-parallel, 14 mm long, 2.1 mm wide, connate at the base; **petals** translucent lavender, glabrous, very narrowly linear-ovate, acute, long-acuminate, 9 mm long, 0.75 mm wide, spreading upward; **lip** dark purple, ovate, acute, minutely apiculate, 6 mm long, 3.5 mm wide, the base rounded, flattened on the end, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Carchi: epiphytic in cloud forest above Maldonado, alt. ca. 2000 m, 25 Aug. 1978, *C. Luer, J. Luer, & A. Hirtz 3376* (Holotype: SEL).

This "showy," lavender, large-flowered species is apparently endemic, rare and local in northwesternmost Ecuador where it has been collected only once. In habit it resembles many other species, but the flowers readily distinguish it with the large, attenuated, long-tailed sepals; the slender, upcurved petals; and the large, ovate lip.

Platystele jesupiorum Luer, Phytologia 49: 199, 1981.

Ety.: Named in honor of Mr. and Mrs. H. Phillips Jesup of Bristol, CT., who have successfully cultivated this species for many years.

Plant small, but medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 8-15 mm long, enclosed by 2-3 thin, ribbed, tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 15-45 mm long including a petiole 8-20 mm long, the blade elliptical, subacute, 7-8 mm wide, cuneate below into the petiole. **Inflorescence** a weak, suberect, loose, lightly flexuous, successively many-flowered raceme up to 15 cm long including the filiform peduncle 2-3 cm long, up to 3 flowers produced simultaneously, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 2 mm long; ovary 0.5 mm long; **sepals** and petals translucent pale green, suffused with rose, ovate, acuminate, acute, ciliate, subcarinate, the dorsal sepal 3.5 mm long, 1 mm wide, the lateral sepals oblique, acute, 3 mm long, 1 mm wide, free to the base; **petals** narrowly ovate, acute, acuminate, ciliate, 3 mm long, 0.6 mm wide; **lip** red-purple, thick, cellular-glandular, ovate, with the apex acute, incurved, 1.75 mm long, 0.75 mm wide, the base subtruncate with a small glenion, fixed to the column-foot; **column** cucullate, 0.25 mm long, 0.5 mm broad, the stigma red, bilobed, the foot rudimentary.

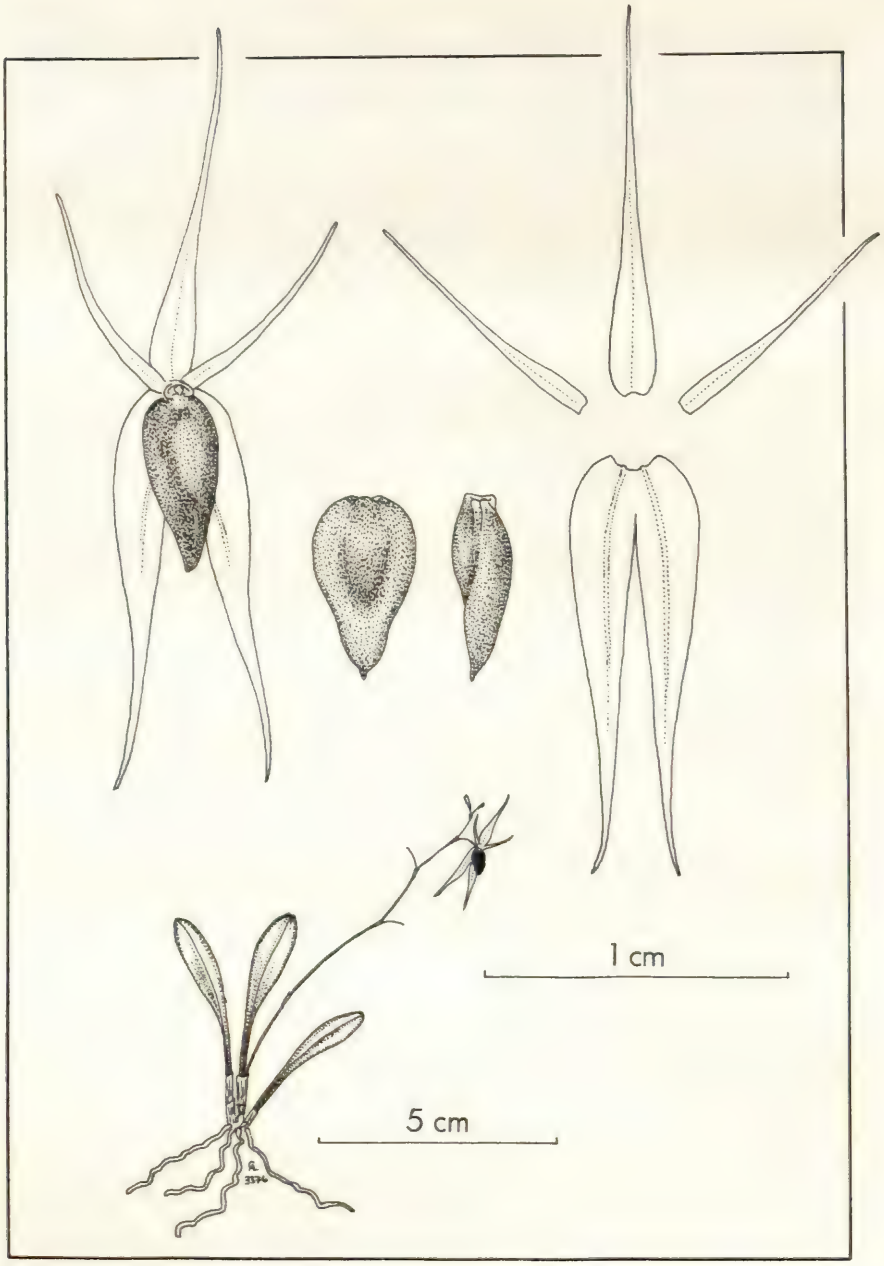

Plate 24. *Platystele hirtzii* Luer

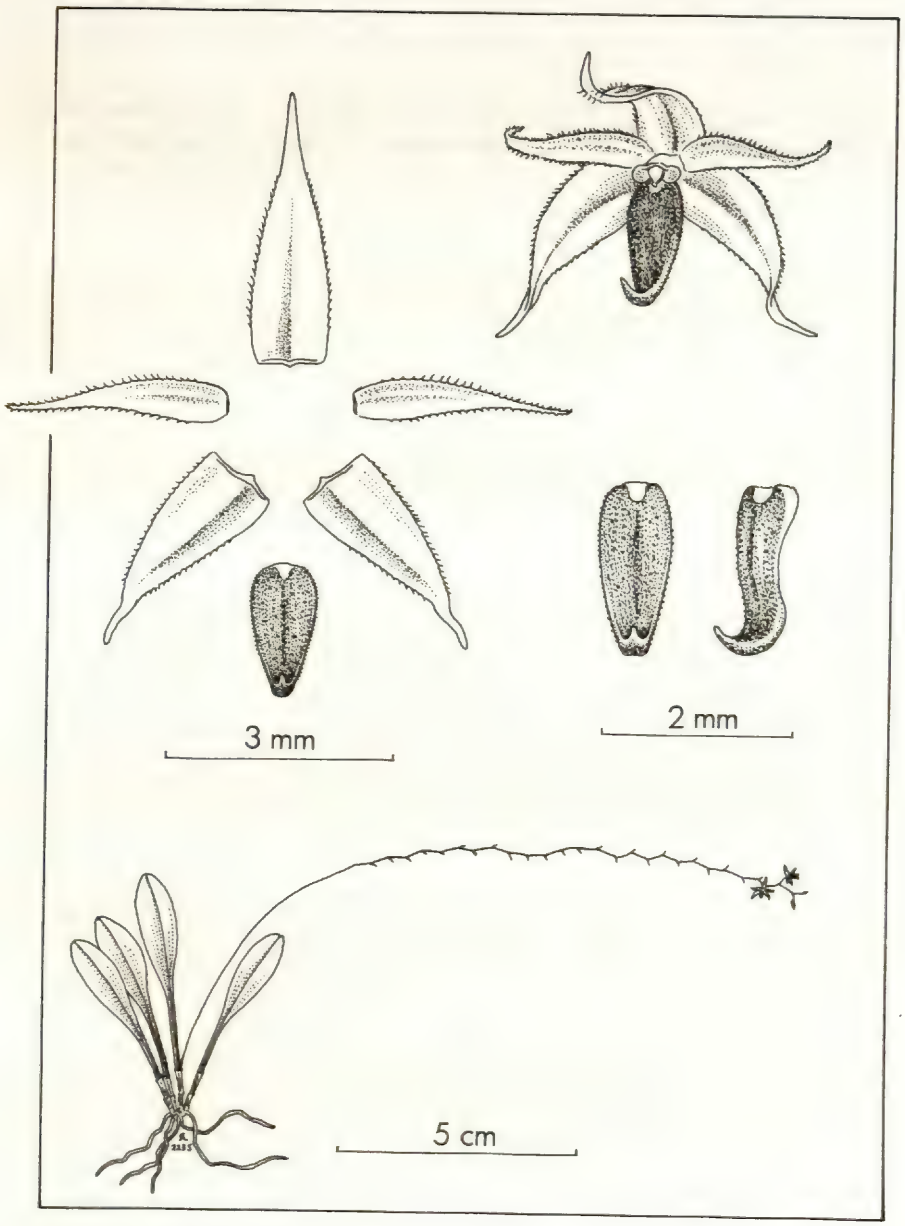

Plate 25. *Platystele jesupiorum* Luer

ECUADOR: without locality: imported from J. Strobel by John B. Logan of the firm Logan & Hurrell, Summit, N.J., flowered in cultivation by P. Jesup in Bristol, CT., 20 Nov. 1977, *C. Luer 2235* (Holotype: SEL). Prov. of Pichincha: epiphytic along the road to the silver mine above Toachi, alt. 1500 m, 14 Mar. 1982, *C. Luer, A. Hirtz & S. Dalström 7386* (SEL); Faisanes, near Chiriboga, July 1983, *A. Hirtz 1008* (SEL).

This species is apparently endemic in the forests of the western slopes of central Ecuador where it has been found on several occasions since the initial importation. It is characterized by the petiolate leaves; a long, loose, successively flowered raceme; acuminate, ciliate sepals and petals; and a lip with an uncinate apex.

Platystele johnstonii (Ames) Garay, Caldasia, 10: 233, 1968.

Bas. *Pleurothallis johnstonii* Ames, Orchidaceae 2: 271, 1908.

Ety.: Named in honor of J. R. Johnston, who discovered this species.

Plant very small, epiphytic, repent, 2-4 mm long between ramicauls; roots slender, from along the rhizome. Ramicauls suberect, 1-1.5 mm long, enclosed by 2-3 thin, imbricating sheaths. **Leaf** more or less prostrate, coriaceous, elliptical, obtuse, notched and apiculate, 4-6 mm long including a petiole 1 mm long, 3-4 mm wide, cuneate below into the base. **Inflorescence** a loose, successively few-flowered raceme up to 2 mm long, borne by an erect, filiform peduncle 5-7 mm long, arising laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 2 mm long; ovary 0.5 mm long; **sepals** translucent pale yellow, glabrous, narrowly ovate, acute, the dorsal sepal very long-attenuate with the tip clavate, 10-18 mm long, 0.8-1 mm wide, 1-veined, the lateral sepals oblique, lightly acuminate, 3-4 mm long, 0.8-1 mm wide, 1-veined, free to the base; **petals** translucent pale yellow, narrowly ovate, acute, acuminate, with microscopically cellular-glandular margins, 2.5-3 mm long, 0.7 mm wide, 1-veined; **lip** yellow, ovate, acute, 1 mm long, 0.5 mm wide, the base truncate, concave on the end with a shallow glenion, attached to the column-foot; **column** cucullate, 0.5 mm long and wide, the stigma bilobed, the foot rudimentary.

VENEZUELA: Edo. Nueva Esparta: Isla de Margarita, Cerro San Juan, alt. 600 m, 16 July, 1903, *J. R. Johnston 238* (Holotype: AMES); Cerro Copey, 10 Mar. 1983, *A. Sugden 1095* (VEN); Cerro Copey, 500-900 m, July 1984, *F. Delascio & A. Gonzáles 12275* (MO, VEN); El Hormiguero, Altoplanicie de Nuria, alt. 600 m, June 1975, *G. C. K. & E. Dunsterville s.n.* (VEN). Edo. Miranda: Guatopo, near Los Alpes, alt. 700 m, Mar. 1967, *G. Bunting, G. C. K. & E. Dunsterville s.n.* (VEN), C. Luer illustr. 14548.

This tiny species is apparently endemic in coastal Venezuela. Although Ames described the lateral sepals as longer than the dorsal sepal in his original description, *P. johnstonii* is readily identified by the exceedingly long-attenuate apex of the dorsal sepal with a clavate tip. Vegetatively the plant is also distinctive with its creeping habit that forms loose mats.

The flower of *P. johnstonii* is similar to that of *P. brenneri* from eastern Ecuador, but the tail of the dorsal sepal of *P. johnstonii* is much longer. Vegetatively *P. brenneri* is caespitose.

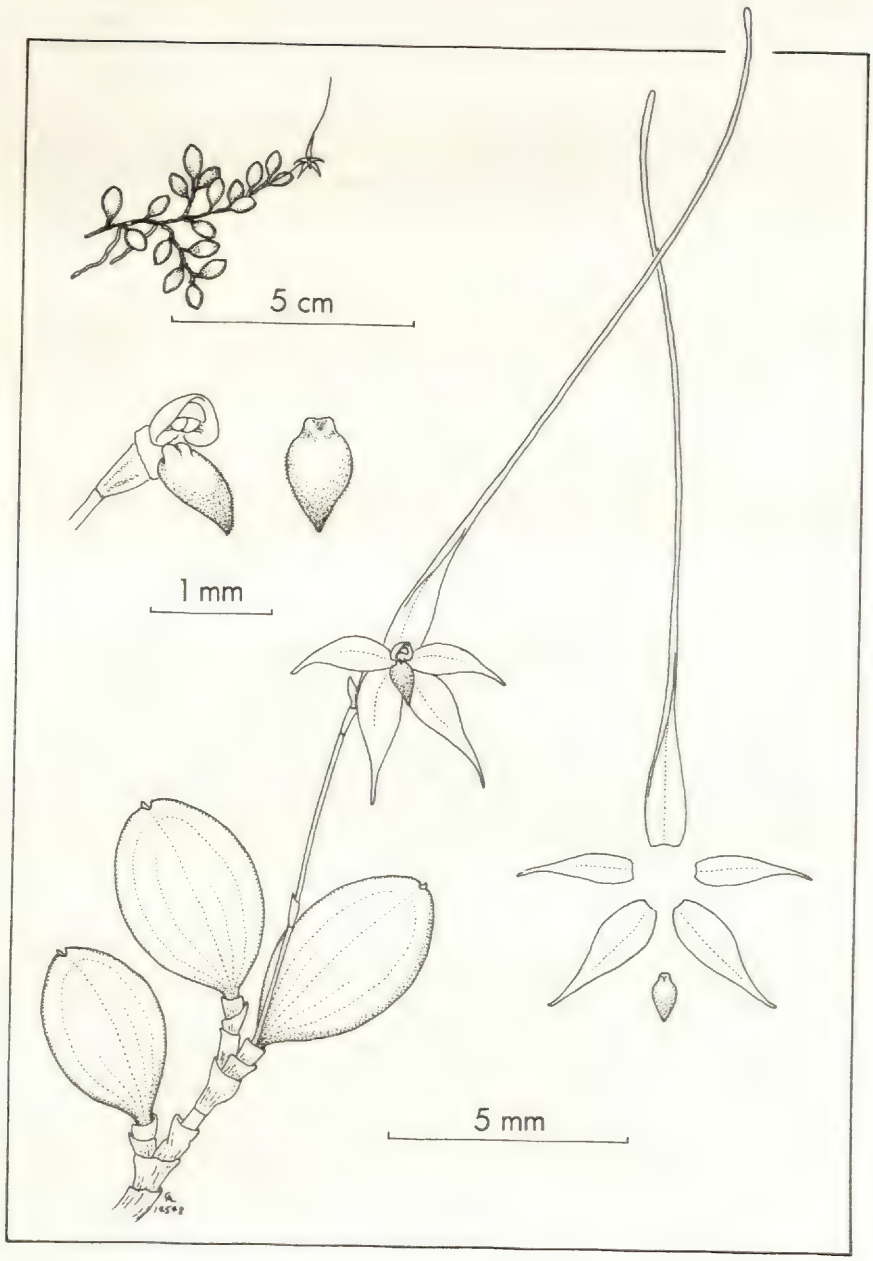

Plate 26. *Platystele johnstonii* (Ames) Garay

Platystele jungermannioides (Schltr.) Garay, Orquideología 9: 120, 1974.

Bas.: *Pleurothallis jungermannioides* Schltr., Repert. Spec. Nov. Regni Veg. 11: 42, 1912.

Ety.: Named for the resemblance of the plant to the Jungermanniales, an order of liverworts.

Plant extremely small, epiphytic, repent; the rhizomes up to 5 cm long or longer, 1-2.5 mm between ramicauls; one root at each node. Ramicauls ascending, rudimentary, 0.2-0.3 mm long, enclosed by 1 loose sheath. **Leaf** suberect, fleshy, elliptical, subacute, 2-2.5 mm long 1-1.5 mm wide, cuneate below into the subpetiolate base. **Inflorescence** a loose, successively 2- to 3-flowered raceme up to 5 mm long including the filiform peduncle, from the ramicaul; floral bracts thin, 0.5 mm long; pedicels 2-2.5 mm long; ovary 0.5 mm long; **sepals** translucent yellow-green, glabrous, ovate, acute, the dorsal sepal 1.2 mm long, 0.6 mm wide, 1-veined, the lateral sepals oblique, 1 mm long, 0.6 mm wide, free to the base; **petals** translucent yellow-green, narrowly ovate, acute, slightly curved, 1 mm long, 0.25 mm wide; **lip** light tan, ovate, acute, slightly acuminate, 1.5 mm long, 0.5 mm wide, the base truncate with a concave glenion, attached to the column-foot; **column** cucullate, 0.5 mm long, 0.5 mm wide, the stigma bilobed, the foot rudimentary.

GUATEMALA: Prov. of Alta Verapaz: near Pansamalá, alt. 3800 ft., *H. von Türckheim (sub 698)* (?).
COSTA RICA: Prov. of Puntarenas: Rincón de Osa, alt. 200-300 m, 6 Feb. 1974, *R. Liesner 1751* (MO).
PANAMA: Prov. of Chiriquí: epiphytic in cloud forest below Cerro Colorado, alt. 1000 m, collected 15 Feb. 1985, flowered in cultivation by P. & A. Jesup in Bristol, CT., 26 Apr. 1987, *C. Luer 12860* (MO). Prov. of Coclé: El Copé, alt. 700-950 m, 2 May 1977, *J. P. Folsum 2884* (MO). Prov. of Colon: Santa Rita lumber road, 26 Mar. 1968, *R. L. Dressler 3462* (MO).

This minute species is reputed to be the smallest known orchid in the world. Schlechter first discovered a dried plant growing among the roots of an herbarium specimen of *Stelis patula* Schltr. At first, he thought it to be a liverwort.

The specimen illustrated grew out of the debris among the roots of a plant of *Scaphosepalum clavellatum* Luer, which had been sent to Mr. and Mrs. H. Phillips Jesup for cultivation. Within two years, the tiny hitch-hiker had grown into a thick, mosslike mat about 10 cm in diameter. It flowers in profusion.

Platystele lancilabris (Reichb. f.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 102, 1923.

Bas.: *Stelis lancilabris* Reichb. f., Beitr. Orchid. Centr. Amer. 94, 1866.

Ety.: From the Latin *lancilabris*, "with lanceolate lip," referring to the shape of the lip.

Syn.: *Pleurothallis lancilabris* (Reichb. f.) Schltr., Repert. Spec. Nov. Regni Veg. 12: 205, 1913.

Plant small, epiphytic, densely caespitose; roots fleshy. Ramicauls erect, slender, 4-8 mm long, enclosed by 2-3 thin, imbricating sheaths. **Leaf** erect, coriaceous, narrowly elliptical-obovate, subacute to obtuse, 15-30 mm long including an indistinct petiole 3-10 mm long, 2.5-4.5 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect, strict, loose, distichous, simultaneously several-flowered raceme up to 8 cm long including the slender peduncle 2-3 cm long, emerging laterally from the ramicaul; floral bracts oblique, 1 mm long; pedicels 4 mm long; ovary 0.4 mm long; **sepals** translucent light yellow-green, glabrous, ovate, acute, the dorsal sepal concave, 2 mm long, 0.75 mm wide, the lateral sepals oblique, 1.75 mm long, 0.9 mm wide, free to the base; **petals** translucent yellow-green, narrowly ovate, slightly curved, acute, 1.75 mm long, 0.4 mm wide; **lip** yellow-green, ovate, acute, 1.2 mm long, 0.75 mm wide, the base truncate with a large glenion, attached to the column-foot; **column** cucullate, 0.8 mm long and broad, the stigma bilobed, the foot rudimentary.

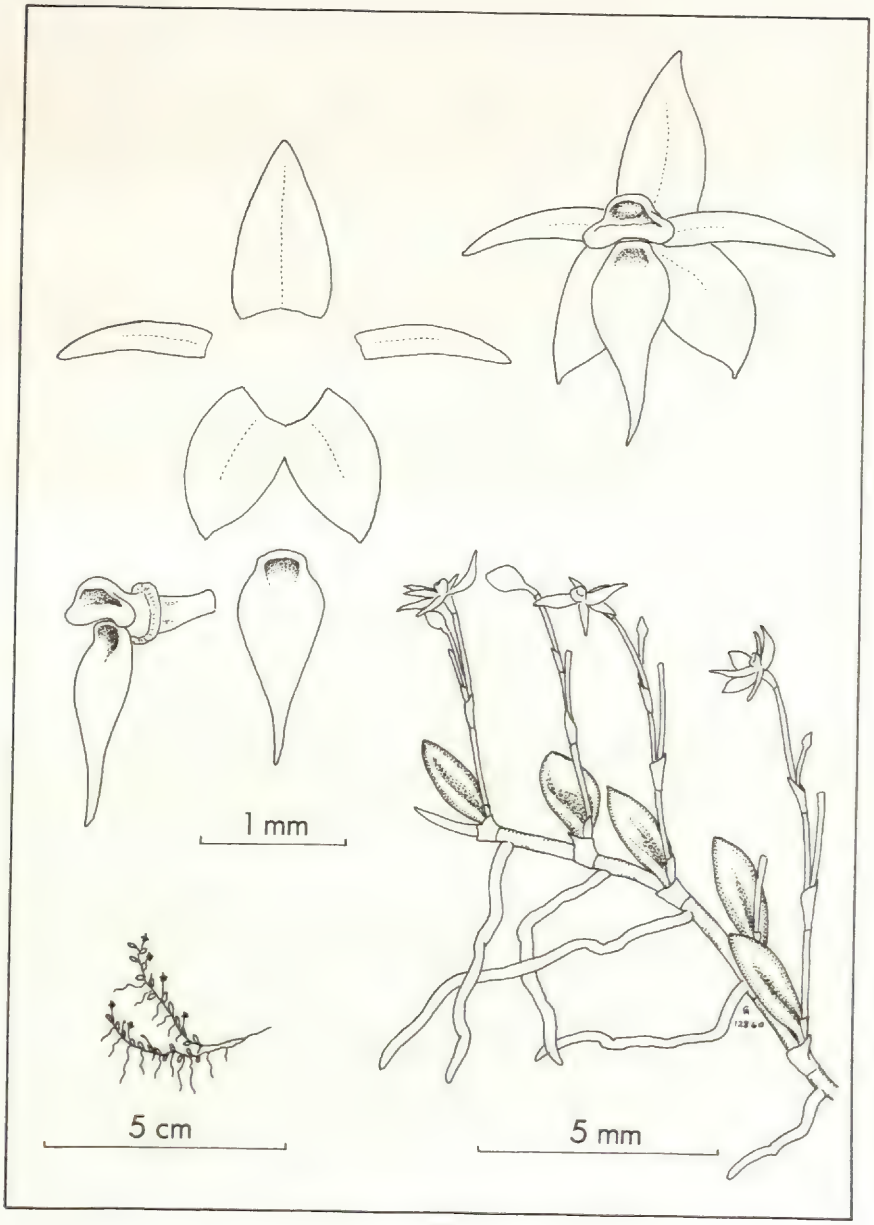

Plate 27. *Platystele jungermannioides* (Schltr.) Garay

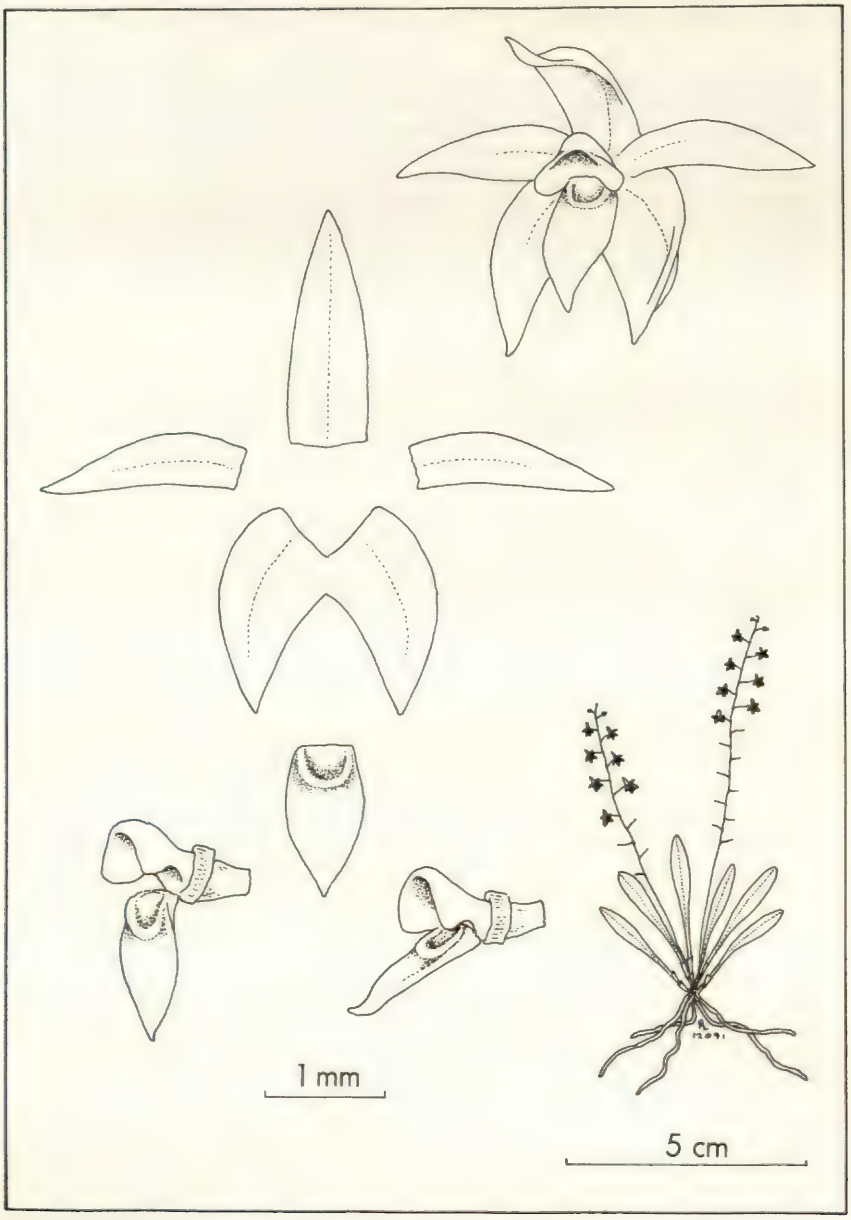

Plate 28. *Platystele lancilabris* (Reichb. f.) Schltr.

COSTA RICA: Prov. of Heredia: Desengaño, *Wendland 904* (Holotype: W); Vara Blanca, alt. 1710 m, Apr. 1938, *A. F. Skutch & C. H. Lankester 3764* (MO). Prov. of Cartago: epiphytic in cloud forest on Volcán Turrialba, alt. 2000 m, 17 Mar. 1986, *C. Luer, J. Luer & D. Dod 12091* (MO). Prov. of Heredia: Vara Blanca, alt. 1680 m, 19 Apr., *C. H. Lankester 1484* (K); between Poas and Barva, alt. 1710 m, Apr. 1938, *C. H. Lankester & A. F. Skutch 3764* (AMES). Prov. of San José: San Isidro, alt. 1600 m, 29 Dec. 1881 *F. C. Lehmann 1069* (G); Las Nubes, alt. 1500-1900 m, 22 Mar. 1924, *P. C. Standley 38684, 38878* (AMES). Without locality *A. Endres 594* (W).

For many years the identity of *P. oxyglossa* has been confused with that of this species. *Platystele lancilabris* is apparently endemic in Costa Rica. Dunsterville's illustration in *Venezuelan Orchids* of *P. oxyglossa* is erroneously identified as *P. lancilabris*. *Platystele lancilabris* is illustrated in *Xenia Orchidaceae*.

Vegetatively *P. lancilabris* is often larger than the usual *P oxyglossa*. The inflorescence is strict and nearly simultaneously flowered instead of more or less flexuous and successively flowered. The sepals and petals of *P. lancilabris* are acute, not acuminate, and usually shorter than those of *P. oxyglossa*. The ovate lip of *P. lancilabris* also is not acuminate and a large glenion is present at the base. The lip of *P. oxyglossa* is usually red-purple, while that of *P. lancilabris* is yellow-green, the same color of the sepals and petals.

Platystele londonoana Luer & Escobar, sp. nov.

Ety: Named in horor of Dr. Rogelio Londoño in whose extensive collection of orchids this species was discovered.

Planta pro genere grandissima caespitosa, ramicaulibus longissimis, racemo disticho laxe plurifloro foliis anguste ellipticis breviore, sepalis petalisque glabris ovatis et la-bello crasso ligulato.

Plant large for the genus, presumably epiphytic, densely caespitose; roots slender. Ramicauls slender, erect, 2-3.5 cm long, enclosed by 2-3 long, tubular sheaths. **Leaf** erect, coriaceous, narrowly elliptical, subacute, 5-8 cm long including the slender, indistinct petiole, 0.7-1 cm wide, the base gradually narrowed into the petiole. **Inflorescence** a loose, distichous, successively several-flowered raceme up to 5 cm long including the capillary peduncle 2.5-3 cm long, emerging laterally from the ramicaul; floral bract 1 mm long; pedicel 2-3 mm long; ovary 1 mm long; sepals glabrous, translucent yellow, ovate, acute, 1-veined, the dorsal sepal 2.5 mm long, 1.4 mm wide, the lateral sepals oblique, 2.25 mm long, 1 mm wide, connate for 0.5 mm; **petals** glabrous, yellow, ovate, oblique, acute, 2 mm long, 0.8 mm wide, 1-veined; **lip** dark yellow, thick, oblong-ligulate, 1.5 mm long, 0.5 mm wide, the apex rounded, the base subtruncate with a rounded, cellular-glandular callus; **column** 0.5 mm long.

COLOMBIA: Without locality, flowered in the collection of R. Londoño near Medellín, 20 Mar. 1989, *C. Luer 14301* (Holotype: MO).

Vegetatively this species is one of the tallest of the genus. The small, yellow flowers are borne successively in a several-flowered raceme shorter than the leaves. The sepals are simple and acute. Most distinctive is the thick and oblong, semiterete lip with a rounded apex.

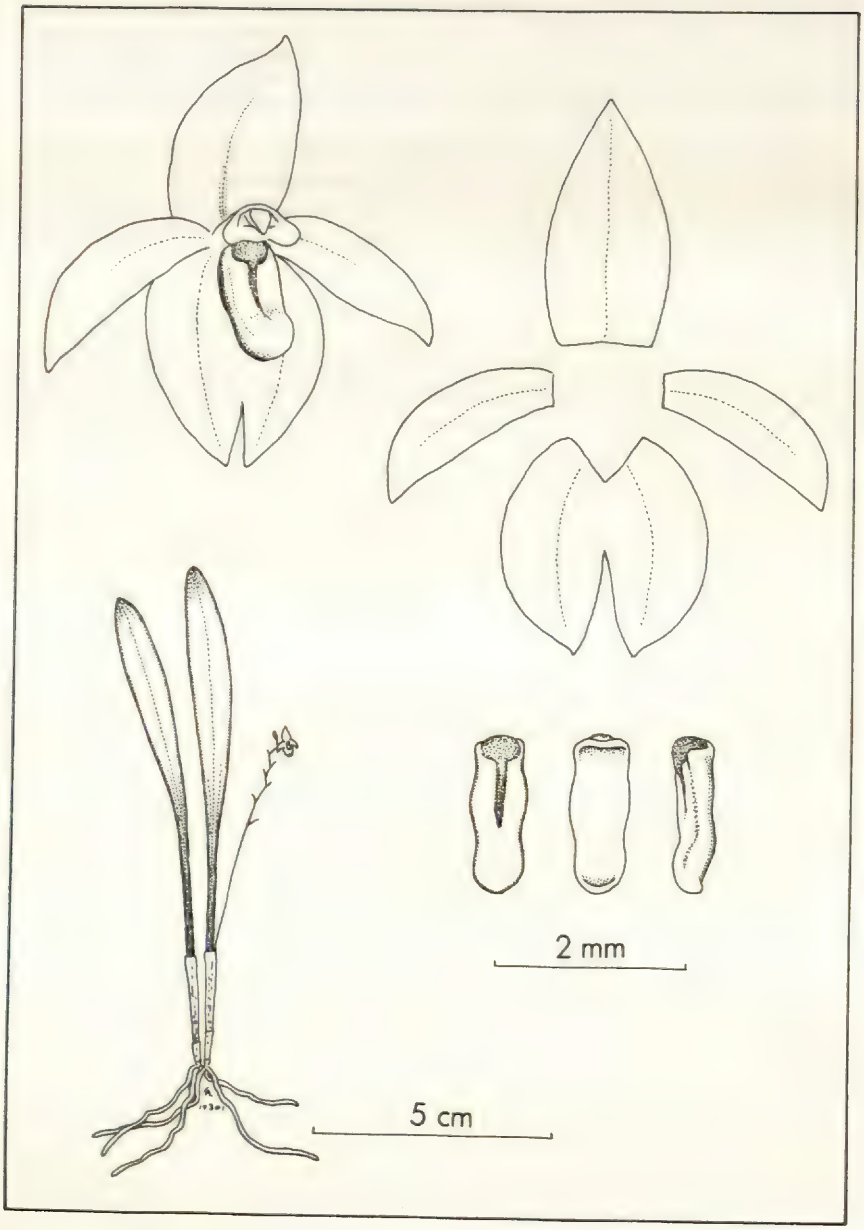

Plate 29. *Platystele londonoana* Luer & Escobar

Platystele lycopodioides Luer & Hirtz, sp. nov.

Ety.: Named for the similarity of the species to a species of club moss (*Lycopodium*).

Species haec *P. ovalifoliae* similis, sed habitu caespitoso, inflorescentia multiflora longiore, petalis latioribus et labelli apice acuto incurvo differt.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls ascending to erect, stout, 1-1.5 mm long, enclosed by 1-2 thin sheaths. **Leaf** erect to suberect, coriaceous, 5-6 mm long including a petiole ca. 1 mm long, the blade elliptical, obtuse to rounded, apiculate, 2-2.5 mm wide, the base cuneate into the petiole. **Inflorescence** an erect, subcongested, successively many-flowered raceme 10-18 mm long including the filiform peduncle, emerging laterally from the ramicaul; floral bracts thin, 0.5 mm long; pedicels 0.5-0.9 mm long; ovary 0.3 mm long; **sepals** translucent yellow-green, glabrous, ovate, acute, the dorsal sepal 1 mm long, 0.4 mm wide, the lateral sepals similar, oblique, 1 mm long, 0.6 mm wide, free to the base; **petals** elliptical, acute, 0.9 mm long, 0.4 mm wide; **lip** bright red-purple, ovate, with the apex narrowly acute, incurved, 0.75 mm long, 0.5 mm wide, the base subtruncate with a minute glenion, fixed to the column-foot; **column** cucullate, 0.4 mm long, 0.4 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of El Oro: epiphytic in cloud forest south of Piñas, alt. 950 m, 20 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10665* (Holotype: MO).

This minute species resembles a club moss. It is similar to the widely distributed *P. ovalifolia*, but the habit is caespitose instead of repent. The inflorescence of *P. lycopodioides*, also successively flowered, is multiflowered and longer, much longer than the tiny cluster of leaves. The flowers are similar, but the petals of *P. lycopodioides* are elliptical and proportionately broader, and the apex of the lip is narrowly acute and incurved.

Platystele megaloglossa Luer & Escobar, Orquideología 16: 39, 1986.

Ety.: From the Greek *megaloglossa*, "a large tongue," referring to the proportionately large lip.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 5-8 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 25-45 mm long including a petiole 12-25 mm long, the blade narrowly elliptical, subacute, 5-6 mm wide, gradually narrowed below into the petiole. **Inflorescence** a weak, suberect, loose, flexuous, distichous, successively many-flowered raceme up to 13 cm long including the filiform peduncle 3-4 cm long, emerging laterally from the ramicaul; floral bracts thin, oblique, 1 mm long; pedicels 4-6.5 mm long; ovary 0.5 mm long; **sepals** translucent purple, glabrous, more or less oblong and concave below the middle, the obtuse apices near the middle contracted into a subulate tail, the dorsal sepal 2.75 mm long, 1 mm wide unexpanded, the lateral sepals oblique, 3 mm long, 1 mm wide, free to the base; **petals** translucent purple, glabrous, narrowly linear-triangular, acute, 2.5 mm long, 0.4 mm wide; **lip** brown, thick, terete, cellular-glandular, narrowly ovate, acute, 3.25 mm long, 0.6 mm wide, the disc with a longitudinal green sulcus, the base subtruncate with a transverse callus and a small glenion, fixed to the column-foot; **column** cucullate, 0.75 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: epiphytic in forest above the Miraflores Dam, alt. 2050 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11374* (Holotype: JAUM; Isotype: MO).

This species is distinguished by the concave sepals with subulate apices, and a comparatively large, semiterete, narrowly ovate lip, as long as or longer than the sepals.

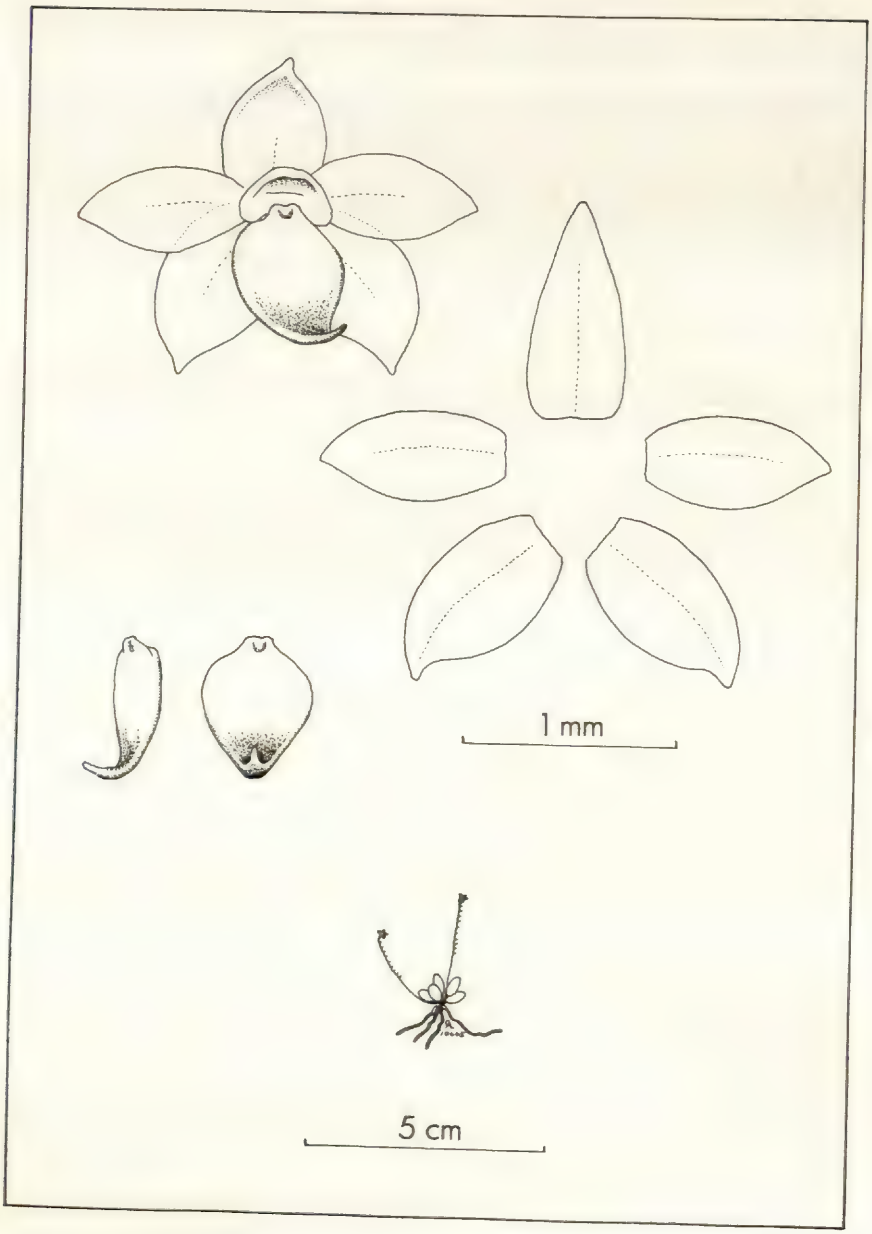

Plate 30. *Platystele lycopodioides* Luer & Hirtz

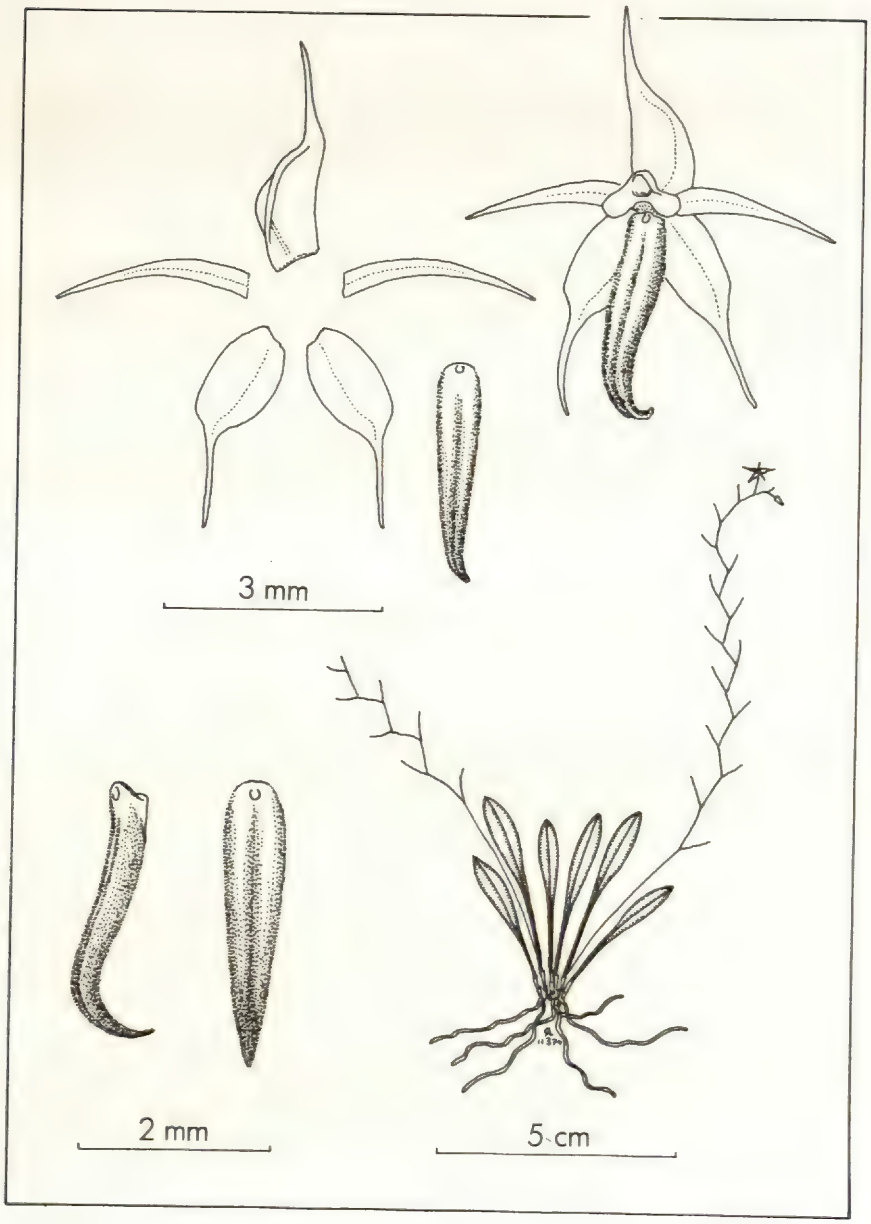

Plate 31. *Platystele megaloglossa* Luer & Escobar

Platystele microglossa P. Ortiz, Orquideología 14: 212, June 1981.

Ety.: From the Greek *microglossa*, "a little tongue," referring to the small size of the lip.

Syn.: *Platystele gemmula* Luer, Phytologia 49: 198, Oct. 1981.
Ety.: From the Latin *gemmula*, "a little gem," in allusion to qualities of the flower.

Plant very small, epiphytic, densely caespitose; roots comparatively coarse. Ramicauls erect, 1.5-2 mm long, enclosed by 2 thin, imbricating sheaths. **Leaf** erect, coriaceous, shortly petiolate, 6-15 mm long including the petiole 1-5 mm long, the blade elliptical, obtuse to rounded, 3-6 mm wide, cuneate below into the petiole. **Inflorescence** a suberect, loose, successively few-flowered raceme up to 4 cm long including the filiform peduncle ca. 1 cm long, emerging from the ramicaul; floral bracts thin, 1-1.5 mm long; pedicels 3-5 mm long; ovary 0.8 mm long; **sepals** and petals translucent pale yellow to pale purple, suffused with purple along the midvein, the margins with ciliate with short, capitate hairs, the dorsal sepal ovate, acute, acuminate, 5-7 mm long, 1.5-2 mm wide, the lateral sepals ovate, oblique, acute, acuminate, 5-7 mm long, 2 mm wide, free to the base; **petals** ovate, oblique, acute, acuminate, 3.5-4 mm long, 1.5 mm wide; **lip** purple, ovate, acute, 1.3 mm long, 0.75 mm wide, the disc slightly channeled, the base with a glenion, subtruncate, fixed to the column-foot; **column** cucullate, 0.25 mm long, 0.9 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: El Carmen de Viboral, *R. Escobar R. 1748* (Holotype: COL); Dept. of Nariño: epiphytic in cloud forest above Ricaurte, alt. ca. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer, K. Walter & A. Hirtz 4581* (SEL, holotype of *P. gemmula*).

This species is apparently rare and local in two distant localities in Colombia. Vegetatively it is very small with spathulate leaves. The flowers are small, but proportionately large for the plant. The sepals and petals are similar: widespread and acuminate. The lip is ovate and acute with a glenion. It is similar to the presently described *P. posadarum* which is distinguished by the long-caudate sepals and the twice larger, obtuse lip.

Platystele microscopica Luer, Phytologia 45: 356, 1980.

Ety.: From the Greek *microscopicos*, "microscopic," in reference to the size of the flowers.

Plant small, epiphytic, shortly repent to caespitose; roots slender. Ramicauls suberect, slender, 2-4 mm long, enclosed by 2 thin, imbricating sheaths. **Leaf** erect, coriaceous, 8-20 mm long including a petiole 3-7 mm long, the blade elliptical, subacute to obtuse or rounded, 4-7 mm wide, cuneate below into the petiole. **Inflorescence** a weak, suberect, loose, flexuous, distichous, successively several- to many-flowered raceme up to 9 cm long including the filiform peduncle 2-3 cm long, 2-4 flowers open simultaneously, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 4-5 mm long; ovary 0.4 mm long; **sepals** and petals translucent pale yellow-green, sometimes lightly suffused with rose, sepals ovate, acute, long-acuminate, glabrous, the dorsal sepal concave, 2.5 mm long, 0.5 mm wide, the lateral sepals oblique, 3 mm long, 0.6 mm wide, free to the base; **petals** narrowly linear-ovate, acute, 2.2 mm long, 0.2 mm wide, the margins cellular-ciliate; **lip** dark purple, cellular-pubescent, narrowly linear, acute, 1.5 mm long, 0.2 mm wide, the disc with a subspherical, pedunculated callus at the base, the base connate to the column-foot by a short claw; **column** cucullate, 0.5 mm long and broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Nariño: epiphytic in cloud forest above Ricaurte, alt. 1600 m, 3 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4608* (Holotype: SEL).
ECUADOR: Prov. of Pichincha: epiphytic in forest near Mindo, alt. 2300 m, Dec. 1983, *A. Hirtz 1437* (MO); epiphytic in cloud forest between San Miguel de los Bancos and Mindo, alt. 2300 m, 1 Apr. 1984, *C. Luer, S. Dalström, T. Höijer & A. Hirtz 9876* (MO).

This species was first recorded from southern Colombia, but it is now known to occur also in the orchid-rich flora of the forests of the western slopes of Mt. Pichincha in Ecuador where it has been encountered several

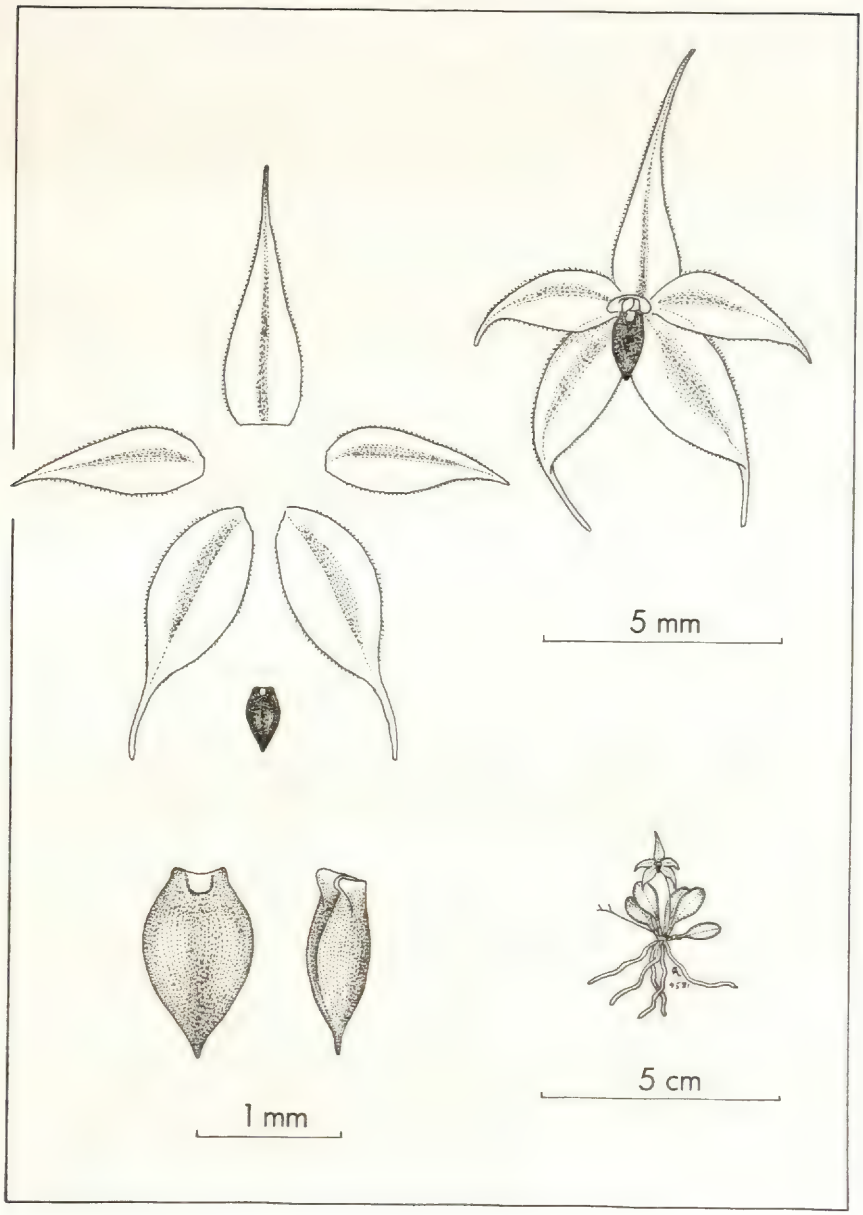

Plate 32. *Platystele microglossa* P. Ortiz

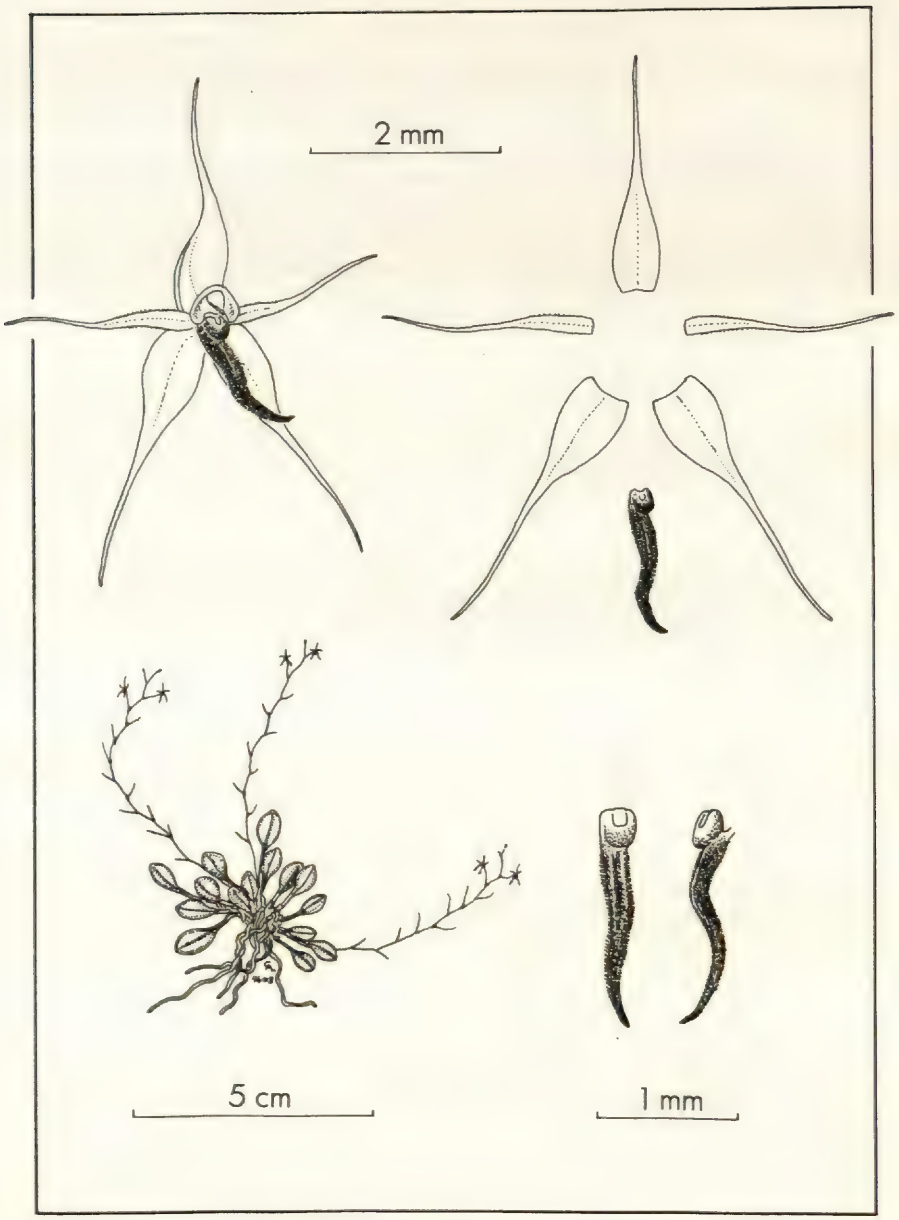

Plate 33. *Platystele microscopica* Luer

times. Vegetatively it is more or less densely repent, forming caespitose plants. The little distichous racemes produce minute flowers with attenuate sepals and petals, but the slender, deep purple lip with the large, pedunculated callus at the base is diagnostic.

Platystele microtatantha (Schltr.) Garay, Bot. Mus. Leafl. 21: 251, 1967, as *microtantha*.

Bas.: *Pleurothallis microtatantha* Schltr., Repert. Spec. Nov. Regni Veg. 3: 276, 1907.

Ety.: From the Greek *microtatanthos* sphalmate?, "with minute flowers," referring to the size of the flowers.

Syn.: *Pleurothallis perparva* Standley & L. O. Wms., Ceiba 3: 193, 1953.

Ety.: From the Latin *perparvus*, "very small," referring to the size of the flowers.

Plant very small, epiphytic, densely caespitose; roots slender, comparatively fleshy. Ramicauls erect, slender, 2-3 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 9-17 mm long including the petiole 2-5 mm long, the blade narrowly elliptical-obovate, subacute, 2.5-3 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a subdense, flexuous, distichous, successively several- to many-flowered raceme up to 20 mm long, 1-2 flowers open simultaneously, borne by an erect, slender peduncle ca. 10 mm long, from the ramicaul; floral bracts thin, 0.5 mm long; pedicels 1.5 mm long; ovary 0.3 mm long, subcostate; **sepals** translucent greenish white, more or less suffused with rose, ovate, obtuse, glabrous, the dorsal sepal 1.2 mm long, 0.8 mm wide, 1-veined, the lateral sepals oblique, 1 mm long, 0.8 mm wide, free to the base; **petals** translucent greenish white, linear-oblong, acute, 1 mm long, 0.2 mm wide; **lip** yellow, more or less marked with rose, elliptical-ovate, 1 mm long, 0.7 mm wide, the apex rounded, abruptly short-acuminate, the disc cellular pubescent, the base truncate, occupied by an elevated, flat, ovate callus 0.4 mm long; **column** cucullate at the apex, with the gynostemium elongated, 0.6 mm long, the stigma bilobed, the foot 0.2 mm long.

COSTA RICA: In the forests of Rancho Flores, alt. ca. 2040 m, 22 Feb. 1890, *A. Tonduz 2156* (Holotype: ?). Prov. of Alajuela: epiphytic on Volcán Poás, alt. 2000 m, 12 Sept. 1979, *C. Luer, J. Luer & K. Walter 4138* (SEL). Prov. of Cartago: Cerro de La Carpintera, alt. 1500 m, Feb. 1924, *P. C. Standley 34344, 34456, 34499* (AMES); Alto de La Estrella, alt. 6500 ft., 23 June 1924, *C. H. Lankester 554* (AMES); La Hondura, 22 Oct. 1952, *John M. H. Lankester 1609* (Herb. Esc. Agr. Pan., type of *P. perparva*). Prov. of Heredia: Yerba Buena, northeast of San Isidro, alt. 2000 m, 22-28 Feb. 1926, *P. C. Standley & J. Valerio 50060* (AMES); Cerro de Las Lajas, north of San Isidro, alt. 2000-2400 m, 7 Mar. 1926, *P. C. Standley & J. Valerio 51561* (AMES); epiphytic on Volcán Barba, alt. 1820 m, 20 Mar. 1986, *C. Luer, J. Luer, T. Linder & W. Rhodehamel 12122* (MO). Without locality *A. Endres 508-85* (W). Without locality, June 1920, *C. H. Lankester s.n.* (K).

This very small-flowered species is found in central Costa Rica where it is relatively frequent. In spite of the extremely small size of the flowers, *P. microtatantha* is easily identified by the comparatively large, flat, triangular callus occupying most of the basal portion of the lip. The callus, however, is not as wide as the blade of the lip. The column stretching over the callus is unusually elongate for the genus. A similar species (*P. schneideri*) with a broader callus of the lip is widely distributed in Colombia.

Platystele minimiflora (Schltr.) Garay, Orquideología 9: 120, 1974.

Bas.: *Pleurothallis minimiflora* Schltr., Repert. Spec. Nov. Regni Veg. Beih. 19: 288, 1923.

Ety.: From the Latin *minimiflorus*, "with tiny flowers," referring to the size of the flowers.

Syn.: *Pleurothallis halbingeriana* R. E. Schultes, Bot. Mus. Leafl. 9: 30, 1941.

Ety.: Named in honor of Christian Halbinger, enthusiast of the orchids of Mexico.

Syn.: *Platystele halbingeriana* (R. E. Schultes) Garay, Orquideología 9: 119, 1974.

Plant extremely small, epiphytic, repent; the rhizomes up to 8 cm long or longer, 1-3 mm between ramicauls; one root at each node. Ramicauls ascending, 1-2 mm long, enclosed by 2 tubular sheathes. **Leaf** suberect, coriaceous, elliptical, subacute, 4-9 mm long 2-3.5 mm wide, cuneate below into the subpetiolate base. **Inflorescence** a successively few- to several-flowered raceme up to 10 mm long, borne by a filiform peduncle 8-15 mm long, from the apex of the ramicaul at the base of the leaf; floral bracts thin, 0.5 mm long; pedicels 1 mm long; ovary 0.5 mm long; **sepals** translucent yellow-green, sometimes suffused with rose, glabrous, ovate, acute,

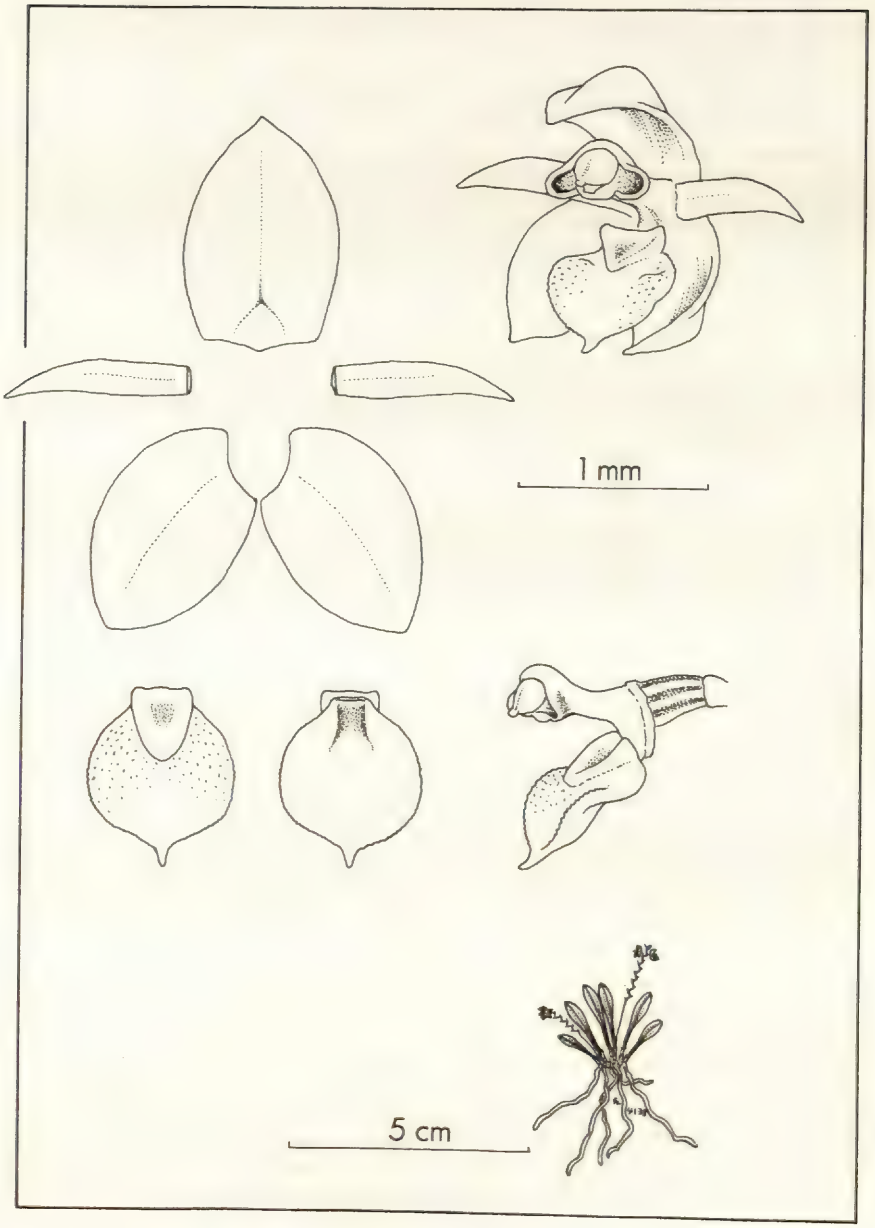

Plate 34. *Platystele microtatantha* (Schltr.) Garay

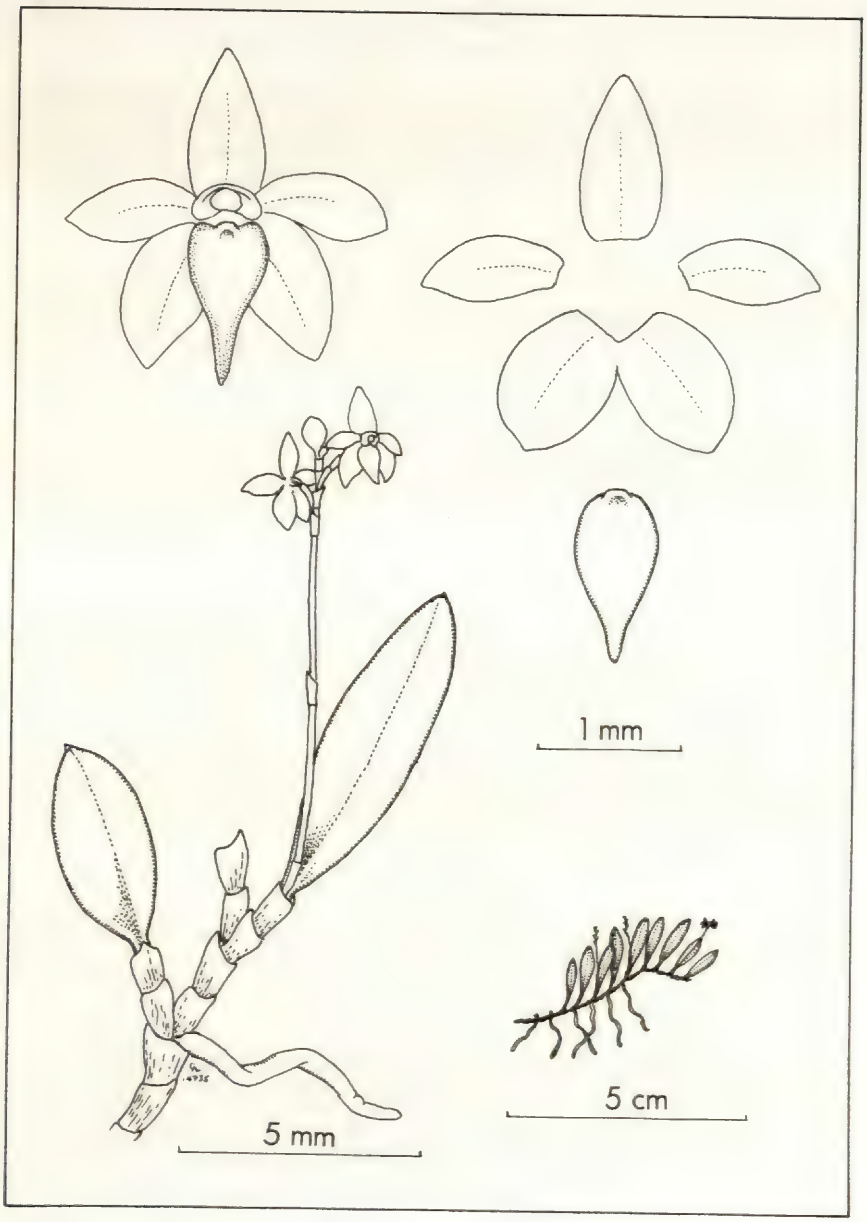

Plate 35. *Platystele minimiflora* (Schltr.) Garay

the dorsal sepal 1-1.2 mm long, 0.5 mm wide, 1-veined, the lateral sepals oblique, 1 mm long, 0.66 mm wide, free to the base; **petals** translucent yellow-green, elliptical-ovate, oblique, acute, 1 mm long, 0.5 mm wide; **lip** light yellow-green, ovate, acute, slightly acuminate, 1-1.2 mm long, 0.5 mm wide, the base truncate with a concave glenion, attached to the column-foot; **column** cucullate, 0.3 mm long, 0.3 mm wide, the stigma bilobed, the foot rudimentary.

COSTA RICA: Prov of San José: near La Palma, Jan. 1922, *C. Wercklé 110* (Holotype: AMES). Prov. of Cartago: Pejivalle, 15 May 1924, *C. H. Lankester 863* (AMES): without locality, alt. 2000 ft., 1869, *A. R. Endres 60* (W).
PANAMA: Prov. of Coclé: El Valle, collected by F L Stevenson, flowered in cultivation in Chamblee, GA., 19 Aug. 1974, *F L Stevenson 81974-1* (SEL), C. Luer illustr. 211.
GUATEMALA: Prov. of Alta Verapaz: flowered in cultivation by Otto Mittelstaedt at Cobán, 13 Feb. 1990, *C. Luer 14611* (MO).
?SAN SALVADOR: Dept. Ahuachapán: El Impossible, Cerro Las Campanas, finca San Benito, alt. 1000 m, 28 May 1975, *V. Hellebuyck 470* (MO). This collection probably belongs here instead of with *P. ovalifolia*.
MEXICO: Edo. de Oaxaca: Dist. of Choapam, San Juan Lalana, alt. ca. 600 m, 7 May 1939, *R. E. Schultes & B. P. Reko 805* (AMES, type of *P. halbingeriana*, F), C. Luer illustr. 14735.

Endres first collected this tiny, creeping species in Costa Rica in 1869. Accompanying the specimens he sent Reichenbach he included detailed drawings and the note that this is "the smallest species of this new genus." Reichenbach seems to have ignored him. The species was rediscovered in 1922 and first described by Schlechter.

Platystele miniflora is closely related to the even tinier *P. jungermannioides*, from which it is distinguished by the usually two to four times larger habit, shorter pedicels, and elliptical petals about twice as broad. The differences in the size and shape of the sepals and lip are insignificant. These two species are also very closely allied to *P. ovalifolia* which is distinguished by the broader, prostrate and overlapping leaves, shorter, fewer-flowered racemes and a lip slightly smaller than the sepals.

It is doubtful that either *P. jungermannioides* or *P. minimiflora* are as rare in their wide distributions in Central America as the few collections might indicate. They must be easily overlooked because of their minute size. Growing in moss, they are practically invisible.

Platystele misasiana P. Ortiz, Orquideología 14: 214, 1981.

Ety.: Named in honor of Dr. Guillermo Misas U. of Medellín, Colombia, who first discovered this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, 3-12 mm long, enclosed by 2-3 thin, imbricating sheaths. **Leaf** erect, coriaceous, 1.5-4 cm long including the petiole 5-15 mm long, the blade narrowly obovate, subacute, 2.5-5 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect, subdense, distichous, simultaneously several to many-flowered raceme up to 8 cm long including the filiform peduncle 3-4 cm long, emerging laterally from the ramicaul; floral bracts tubular, 1 mm long; pedicels 1.5 mm long; ovary 0.25 mm long, with verrucose carinae; **sepals** yellow, the margins microscopically cellular-short-ciliate, the dorsal sepal oblong-ovate, acute, 1.8-2 mm long, 0.8 mm wide, the lateral sepals falcate-ovate, oblique, acute, 1.6 mm long, 0.75 mm wide, connate 0.25 mm; **petals** subfalcate-ovate, oblique, acute, shortly ciliate, 1.5-1.8 mm long, 0.5 mm wide; **lip** orange, obovate, obtuse, 1 mm long, 0.5-0.8 mm wide, cellular-glandular, the disc slightly concave, the base truncate, fixed to the column-foot; **column** cucullate, 1 mm long, 0.75 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Tenche, Represa Miraflores, collected by G. Misas U., Feb. 1978, flowered in cultivation by P. Ortiz in Bogotá, May 1979, *P. Ortiz V. 960* (Holotype: COL); same locality, alt. 2050 m, 15 May 1985, *C. Luer, R. Escobar & E. Valencia 11369* (MO).

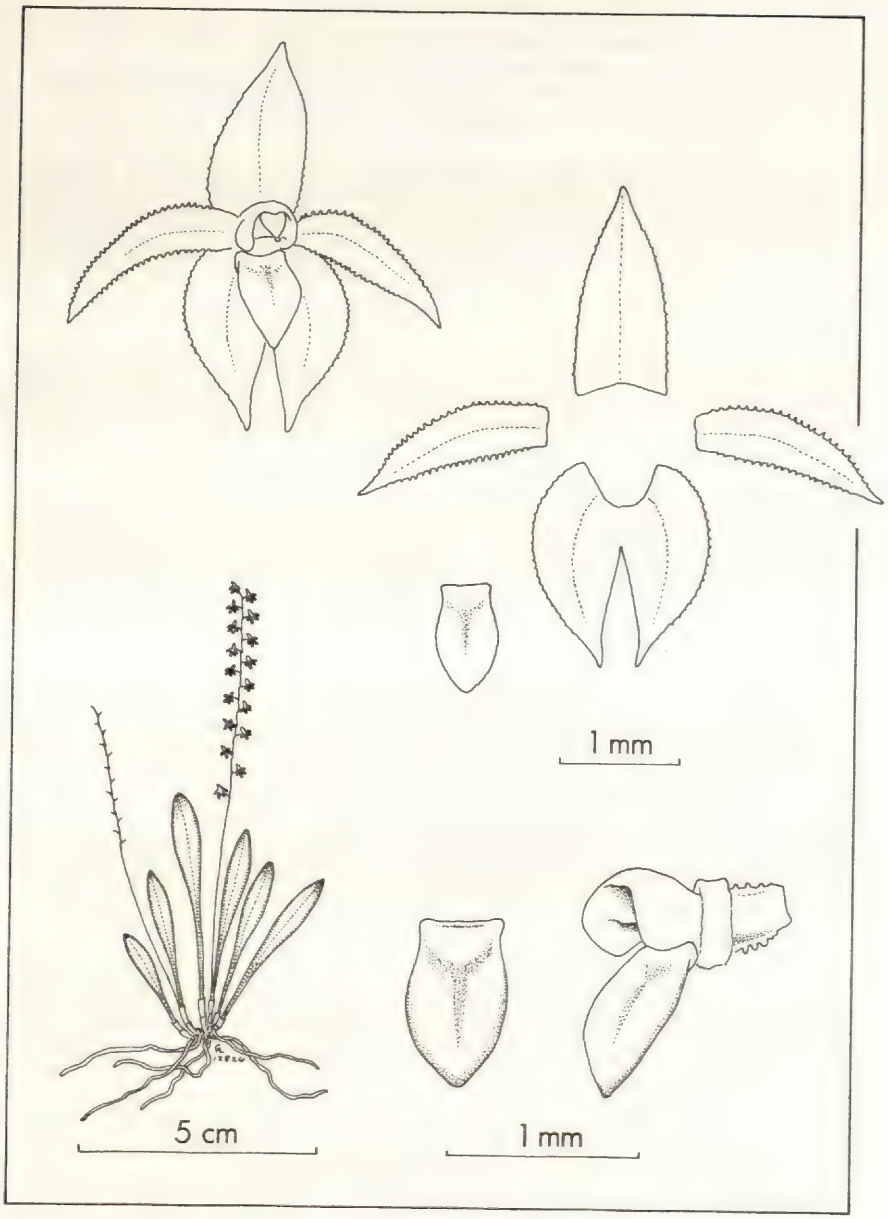

Plate 36. *Platystele misasiana* P. Ortiz

This species is apparently endemic in the Central Cordillera of Colombia in the forests that still surround the Miraflores Dam. It has been found there on several occasions. It is identified by the narrowly obovate leaves; an erect raceme of numerous, small, simultaneous flowers; falcate, ciliate petals; and an obovate, obtuse lip free of callus or glenion.

Platystele misera (Lindley) Garay, Bot. Mus. Leafl. 21: 251, 1967.

Bas.: *Pleurothallis misera* Lindley, Folia Orchid. *Pleurothallis* 36, 1859.

Ety.: From the Latin *miser*, "miserable," compared to larger-flowered species of *Pleurothallis*.

Syn.: *Humboldtia misera* (Lindley) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Plant medium in size to large for the genus, epiphytic, caespitose; roots fleshy. Ramicauls erect, stout, 1.5-2.5 cm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 5-8 cm long including a petiole 1.5-2 cm long, the blade elliptical-obovate, obtuse to rounded, 1-1.5 cm wide, cuneate below into the petiole. **Inflorescence** an erect, subdense, distichous, successively many-flowered raceme up to 25 cm long including the peduncle 6-8 cm long, several flowers produced simultaneously, emerging laterally from the ramicaul; floral bracts thin, 1.5 mm long; pedicels 2-3.5 mm long; ovary 1-1.5 mm long; **sepals** and petals translucent, lightly suffused with rose, the sepals ovate, subacute, glabrous, subcarinate, the dorsal sepal 2-2.25 mm long, 1-1.25 mm wide, the lateral sepals oblique, 2-2.25 mm long, 1 mm wide, free to the base; **petals** narrowly ovate, acute, glabrous, 2 mm long, 0.6 mm wide; **lip** rose-purple, thick, cellular-glandular, elliptical-ovate, 2 mm long, 1 mm wide, the apex narrowly rounded, the base subtruncate with a faint, shallow glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

PERU: Dept. of San Martin: Chachapoyas, on tree trunks, *Mathews 3197* (Holotype: K; Isootype G). Dept. of Amazonas: Río Utcubamba north of Leimebamba, alt. 1850 m, 25 May 1964, *P. C. Hutchison & D. Bennett 4537* (JEPS, G, K, MO, NY, US); Cerros Calla Calla above Leimebamba, alt. 2535 m, 27 May 1964, *P. C. Hutchison & D. Bennett 4610* (AMES, F, JEPS, K, NY, UC, US, USM); same locality, alt. 2750-2850 m, *J. J. Wurdack 1171* (AMES). Chachapoyas, 4 Apr. 1964, *P. C. Hutchison & J. K. Wright 4901* (K); Chachapoyas: 5 Dec. 1877, *M. Vidal-Sénège s.n.* (P); near Vilcaniza, collected by C. Head, flowered in cultivation by the Jesups in Bristol, CT, 6 May 1990, *C. Luer 14764* (MO).

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This species occurs in the orchid-rich forests of northeastern Peru where it was first discovered by the noted collector Mathews, and described in *Pleurothallis* as *P. misera* by Lindley. The specific epithet distinguished the species as compared to others in the genus *Pleurothallis*.

Vegetatively the plants are robust compared to most others in the genus *Platystele*. The short-stemmed leaves are thickly coriaceous and narrowly obovate, more or less resembling those of a *Masdevallia*. The erect racemes may reach a height about three times the length of the leaves. The very small floral parts are basically simple. The lip is elliptical-ovate with the apex narrowly rounded.

Platystele misera is related to the Ecuadorian *P. gyroglossa* and the Colombian *P. consobrina*, both of which have thinner, narrower, acute leaves. The lip of *P. gyroglossa* is broadly rounded, that of *P. consobrina* is subacute.

Platystele muscicola Luer & Hirtz, sp. nov.

Ety.: From the Latin *muscicola*, "moss-dwelling," referring to the habitat.

Planta minuta caespitosa, inflorescentia laxa foliis ellipticis longiore, sepalis petalisque ovatis acutis pubescentibus, labello ovoideo subpandurato obtusis lateribus revolutis pubescenti.

Plant very small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-2.5 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 7-12 mm long including the petiole 2-3 mm long, the blade elliptical-obovate, subacute, 3-3.5 mm wide, the base cuneate into the petiole. **Inflorescence** a loose, successively several-flowered raceme up to 10 mm long including the erect, filiform peduncle 10 mm long, emerging laterally

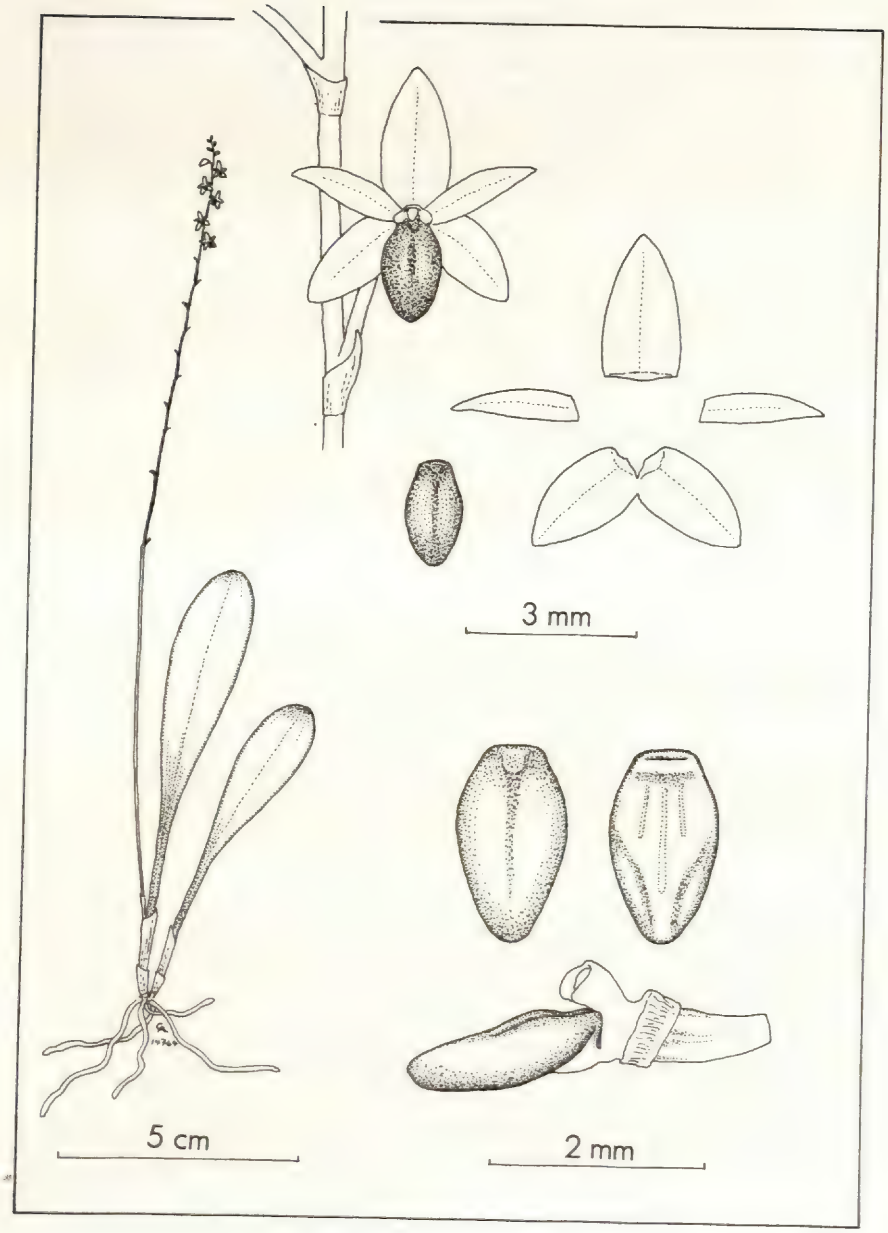

Plate 37. *Platystele misera* (Lindley) Garay

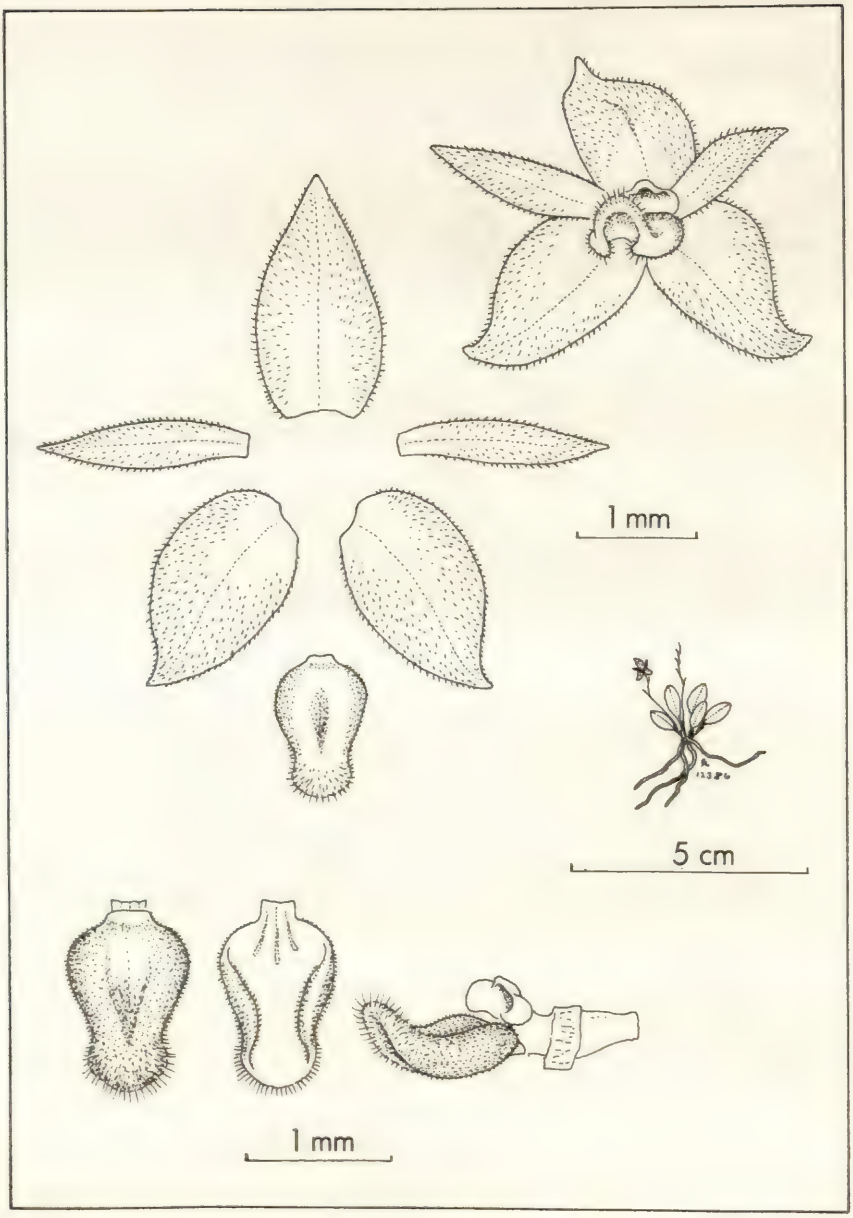

Plate 38. *Platystele muscicola* Luer & Hirtz

from the ramicaul; floral bracts thin, 0.75 mm long; pedicels 2.5 mm long; ovary 0.5 mm long; **sepals** translucent yellow, shortly pubescent, ovate, acute, the dorsal sepal 2 mm long, 1 mm wide, 1-veined, the lateral sepals oblique, free to the base, 1.8 mm long, 1 mm wide; **petals** translucent yellow, shortly pubescent, narrowly ovate, acute, 1.8 mm long, 0.4 mm wide; **lip** red-brown, thick, cellular-glandular, long-pubescent above the middle, ovate-subpandurate, 1.2 mm long 1 mm wide, lightly concave centrally, the sides revolute, the apex obtuse, curved up, the base truncate, rigidly attached to the column-foot; **column** cucullate, 0.6 mm long, 0.8 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Esmeraldas: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C. H. Dodson, D. Benzing & D. Bermudes 12386* (Holotype: MO).

Only a few plants of this tiny species have been discovered. Perhaps there were many others growing in the deep moss of the tree branches, but very difficult to see even with flowers. It grows in the company of *Lepanthes filamentosa* Luer & Hirtz, an even more "invisible" species. The flowers of *P. muscicola* are distinctive with the ovate, pubescent sepals and petals, and the rigidly protruding, long-pubescent lip with revolute sides.

Platystele myoxura Luer & Hirtz, sp. nov.

Ety.: From the Greek *myoxura*, "a mouse tail," in allusion to the appearance of the apex of the lip.

Planta mediocris caespitosa, inflorescentia laxe racemosa foliis anguste ellipticis multilongiore, sepalis petalisque anguste ovatis acuminatis, labelli lamina crassa ovoidea bicarinata, labelli cauda filiformi pubescenti.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-7 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 2-4 cm long including a petiole 0.5-1.5 cm long, the blade narrowly elliptical-obovate, subacute, 0.5-1 cm wide, cuneate below into the petiole. **Inflorescence** a weak, suberect, secund, distantly and successively several- to many-flowered raceme up to 15 cm long including the filiform peduncle 2-4 cm long, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 5-10 mm long; ovary 0.6 mm long; **sepals** translucent tan, red-brown centrally, glabrous (microscopically cellular-glandular), ovate, acute, long-acuminate, the dorsal sepal 6 mm long, 2 mm wide, the lateral sepals oblique, 6 mm long, 1.75 mm wide, free to the base; **petals** translucent tan, minutely cellular-glandular, very narrowly ovate, acute, long-acuminate, 4.5 mm long, 0.5 mm wide; **lip** red-brown, the blade thick, cellular-glandular, ovoid, 2.3 mm long, 1.6 mm wide, the disc with a longitudinal pair of carinae, the obtuse apex abruptly contracted into a pubescent, filiform tail 3-3.5 mm long, the base rounded with a deep glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1.25 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Napo: epiphytic in cloud forest on the eastern declivity of Volcán Reventador, alt. ca. 1850 m, 8 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11711* (Holotype: MO).

Apparently endemic and local, this unique species has been seen from only the original collection. In habit it resembles many other species, but the flowers are comparatively large and distantly spaced in the long, weak raceme. The long-acuminate sepals and petals are not unusual, but the lip is distinctive. The blade is ovoid with a pair of longitudinal carinae, and the obtuse apex is abruptly contracted into a tail that resembles the tail of a mouse.

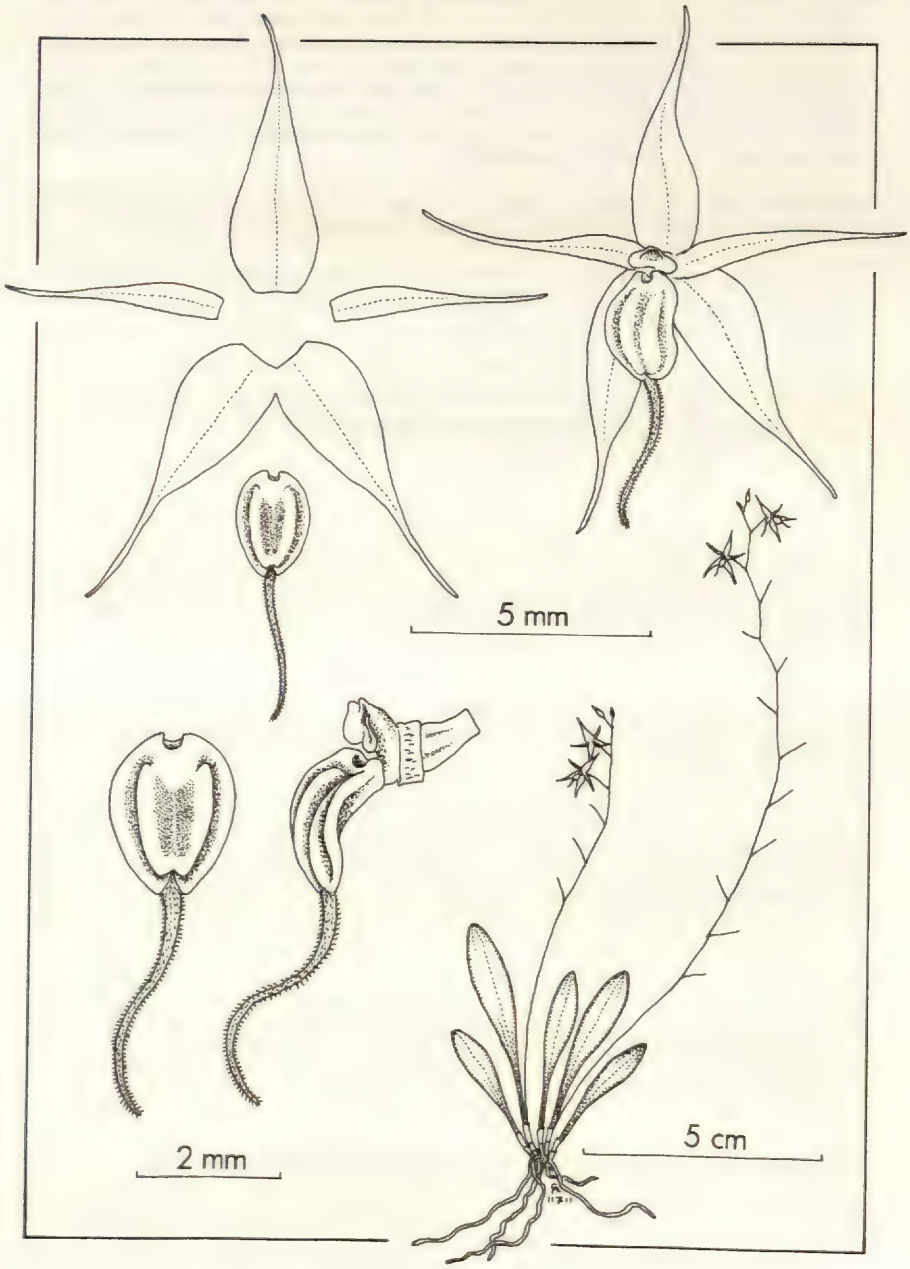

Plate 39. *Platystele myoxura* Luer & Hirtz

Platystele orchestris P. Ortiz, Orquideología 14: 20, 1979.

Ety.: From the Greek *orchestris*, "a dancer," in allusion to the appearance of the flower.

Plant minute, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-1.2 mm long, enclosed by 2 thin, imbricating sheaths. **Leaf** erect, coriaceous, 5-8 mm long including a petiole 1-1.5 cm long, the blade narrowly elliptical, subacute to obtuse, 2-2.5 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect, congested, successively few-flowered raceme up to 3 mm long, borne by a slender peduncle ca. 5 mm long, emerging laterally from the ramicaul; floral bracts thin, 0.5-1 mm long; pedicels 3 mm long; ovary 1 mm long; **sepals** translucent rose, minutely ciliate, narrowly ovate, acute, acuminate, the dorsal sepal 5 mm long, 1 mm wide, the lateral sepals similar, oblique, more or less crossed above the middle, connate near the base; **petals** translucent rose, minutely ciliate, narrowly ovate, subfalcate, acute, 2 mm long, 0.5 mm wide; **lip** red, cellular-glandular, ovate, acute, slightly acuminate, 1.5 mm long, 0.4 mm wide, the base subtruncate, attached to the column-foot; **column** cucullate, 0.8 mm long and broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Chocó: Bahia Solano, Jan. 1976, *G. Misas 10* (Holotype: COL).

Platystele orchestris is known only from a fragment deposited as the type. It is not known to have been rediscovered. The accompanying illustration is based on this fragment, the description, the published illustration by Father Ortiz, and the photograph. The species is distinguished by the rose-colored flowers, relatively large for the tiny habit of the plant, borne successively in a few-flowered inflorescence about as long as the leaf; long-pointed, ciliated sepals, the laterals crossing each other near the middle; falcate, ciliate, decurved petals; and a small, red, ovate and acute lip.

Platystele orectoglossa P. Ortiz, Orquideología 14: 22, 1979.

Ety.: From the Greek *orectoglossa*, "an extended tongue," referring to the position held by the lip.

Plant small to medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 0.5-3 cm long, enclosed at the base by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 2-7 cm long including the petiole 1-3 cm long, the blade elliptical, subacute to obtuse, 0.8-2.1 cm wide, the base cuneate into the petiole. **Inflorescence** a loose, flexuous, distichous, successively few (sometimes 2-3 flowers simultaneously) to many-flowered raceme, up to 20 cm long including the slender, suberect peduncle 3-9 cm long, emerging laterally from the ramicaul; floral bracts oblique, 2 mm long; pedicels 3-5 mm long; ovary 1-1.5 mm long; **sepals** similar, translucent pale green, suffused with pale rose, glabrous, narrowly ovate, acute, 6 mm long, 1.6 mm wide, free to the base; **petals** colored as the sepals, glabrous, narrowly ovate-triangular, acute, attenuate, 6 mm long, 0.6 mm wide; **lip** protuberant, dark purple, thick, cellular-glandular, fusiform-ovate, usually acute but sometimes rounded, 4.5 mm long, 1.5 mm wide, the disc with a narrow, longitudinal sulcus, the base subtruncate-concave, with a small glenion, fixed to the column-foot; **column** green cucullate, 1 mm long, 1.2 mm broad, the stigma purple, bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Munic. of Yarumal, Briceño, "El Oro," 3 Jan. 1974, *R. Escobar, O. J. Arango & W. Teague 1053* (Holotype: COL); flowered in cultivation by M. & O. Robledo at La Ceja, 8 Oct. 1977, *C. Luer 1956* (SEL); epiphytic in damp forest above Caramanda, alt. 2000 m, 6 Oct. 1883, *F. C. Lehmann 3208* (G); Munic. of El Retiro, Hda. Normandía, alt. 2500 m, 2 Dec. 1956, *M. Ospina H. 74* (AMES, COL); Las Animas, east of Santo Domingo, alt. 1830 m, 12 May 1985, *C. Luer, R. Escobar & E. Valencia 11360* (MO). Dept. of Valle del Cauca: monte La Guarida, above Carbonera between Las Brisas and Albán, alt. 1950-2000 m, 16 Oct. 1946, *J. Cuatrecasas 22147* (AMES).
ECUADOR: Prov. of Carchi: epiphytic in cloud forest between Tulcán and El Carmelo, alt. 3200 m, 6 Apr. 1985, *C. Luer, J. Luer & A. Hirtz 11114* (MO). Prov. of Zamora-Chinchipe: between Loja and Zamora, alt ca. 1400 m, collected by Walter Teague, flowered in cultiviation by J & L Orchids, Easton, CT., 5 May 1990, *C. Luer 14752* (MO).

This species is locally abundant in the Central Cordillera of Colombia, but infrequent in the Oriente of Ecuador. It is variable in size both vegetatively

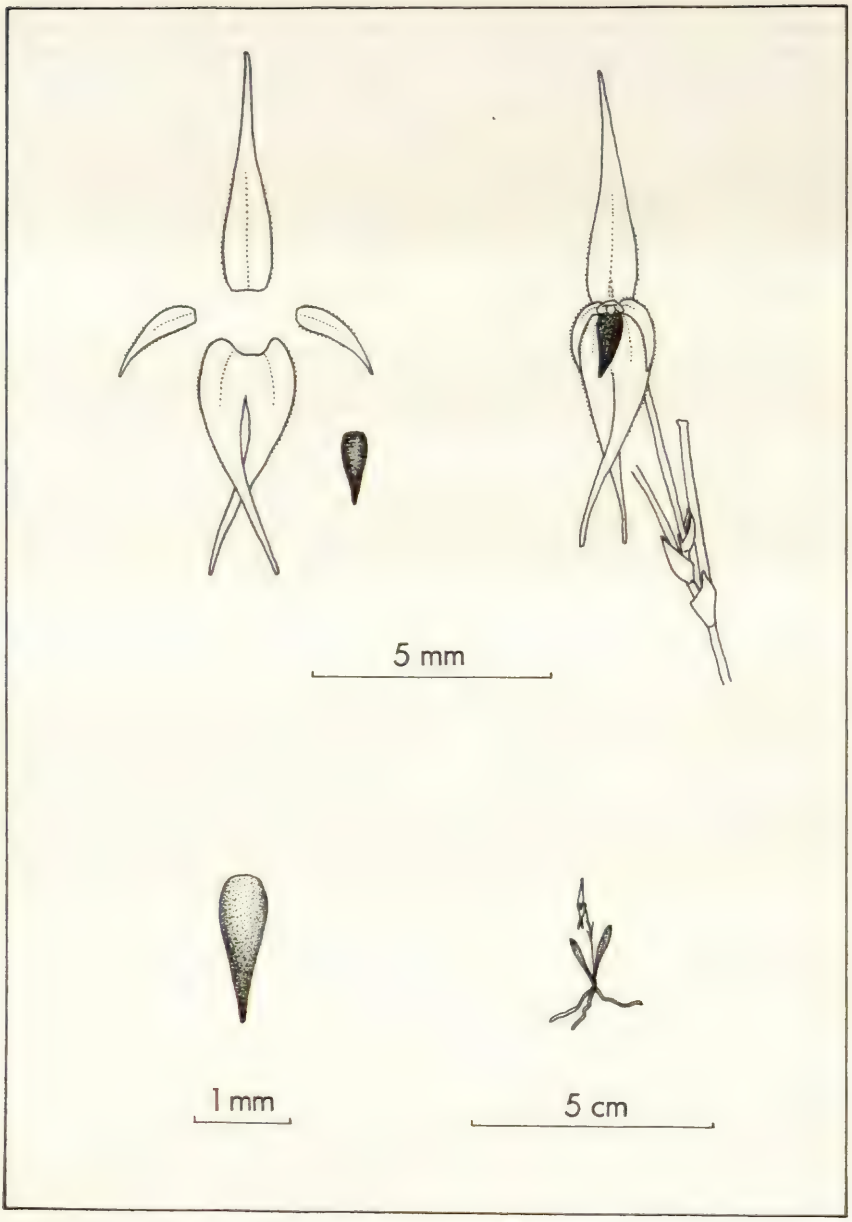

Plate 40. *Platystele orchestris* P. Ortiz

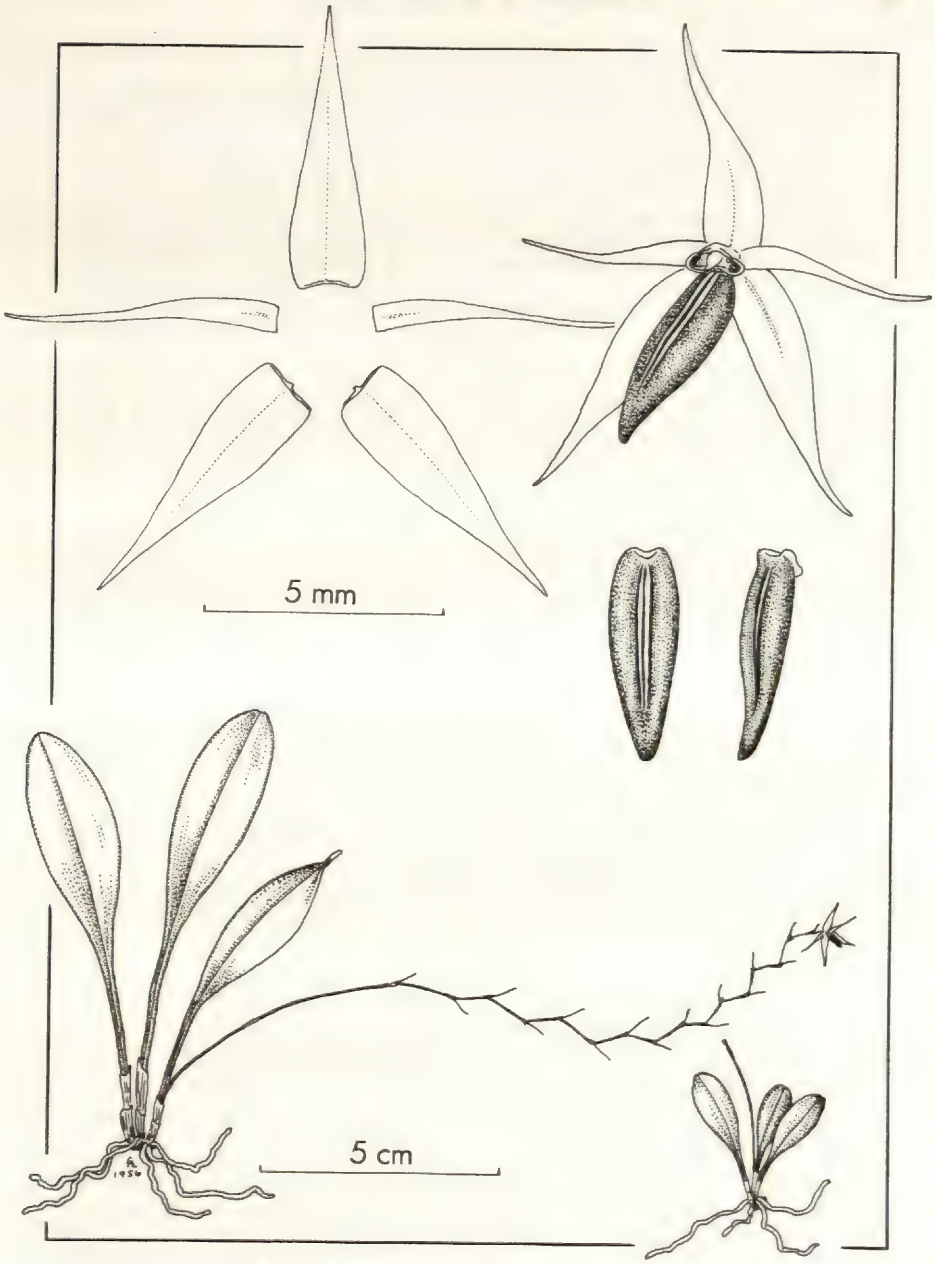

Plate 41. *Platystele orectoglossa* P. Ortiz

and florally. The raceme is more or less flexuous. The comparatively large flowers are distinctive with the narrowly ovate, acute sepals and petals surrounding a large, protruding, deep purple, spindle-shaped lip with thick, revolute margins and a central, longitudinal sulcus.

Platystele ornata Garay, Bot. Mus. Leafl. 18: 199, 1958.

Ety.: From the Latin *ornatus*, "ornate," referring to the fringe of the sepals and petals.

Syn.: *Pleurothallis ornata* (Garay) Foldats, Acta Bot. Ven. 3: 387, 1968, non Reichb. f. 1882.

Syn.: *Pleurothallis guatopensis* Foldats, Fl. Venez. 15(5): 480, 1970.
Ety.: Named for the Parque Nacional de Guatopo where this species was discovered.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1.5-3 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 6-22 mm long including a petiole 1-3 mm long, the blade elliptical-obovate, obtuse to rounded, 2.5-3 mm wide, cuneate below into the petiole. **Inflorescence** an erect to suberect, dense, distichous, simultaneously several-flowered raceme up to 22 mm long including the peduncle 10-12 mm long, up to 10 flowers produced simultaneously, emerging laterally from the ramicaul; floral bracts thin, 0.5 mm long; pedicels 0.5-1 mm long; ovary 0.25-0.4 mm long, trialate; **sepals** and **petals** rose to purple, ovate, obtuse, cellular-glandular, the margins with subclavate trichomes, the dorsal sepal 0.75-0.9 mm long, 0.6-0.7 mm wide, the lateral sepals oblique, 0.75 mm long, 0.5 mm wide, free to the base, the petals 0.4-0.6 mm long, 0.25 mm wide; **lip** red-purple, cellular-glandular, ovate, acute, lightly acuminate, 0.8-0.9 mm long, 0.5-0.6 mm wide, the base subtruncate with a well-defined glenion, fixed to the column-foot; **column** cucullate, 0.4 mm long, 0.4 mm broad, the stigma bilobed, the foot rudimentary.

VENEZUELA: Edo. de Miranda: Guatopo, between Santa Teresa to Altagracia, 28 Dec. 1958, *G. C. K. Dunsterville 114* (Holotype: AMES); apparently same area, flowered in cultivation by G. C. K. Dunsterville, 13 Oct. 1963, *J. Steyermark & G. C. K. Dunsterville s.n.* (VEN); same area, obtained from Dunsterville by the Brooklyn Botanic Garden, cultivated by P. Jesup in Bristol, CT., flowered in cultivation by J & L Orchids, Easton, CT., 12 May 1981, *C. Luer 6009* (SEL).
ECUADOR: Prov. of Morona-Santiago: Santiago to Yaupi, Km 100, alt. 400 m, Aug. 1989, *A. Hirtz & X. Hirtz 4369* (MO), C. Luer illustr. 14547.

A strong magnifying glass is necessary to appreciate the sparkling beauty of *P. ornata*, one of the smallest-flowered species of the Orchidaceae. The tiny, purple flowers are cellular-glandular with irregular, glandular hairs along the margins of the sepals and petals. *Platystele ornata* was discovered in 1958 by G. C. K. Dunsterville during his extensive combing of the country for material to illustrate for Venezuelan Orchids.

Recently *P. ornata* has been discovered in the Oriente of Ecuador by Alexander Hirtz. This species is apparently rare, known from only two, widely separated localities.

Platystele ortiziana Luer & Escobar, sp. nov.

Ety.: Named in honor of Father Pedro Ortiz V. of Bogotá, Colombia, well-known authority on the Orchidaceae of Colombia.

Species haec *P. umbellatae* P. Ortiz similis, sed ramicaulibus longioribus et labello majore cum lateribus revolutis apice convexo differt.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 20-30 mm long, partially enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 30-45 mm long including the petiole 5-10 mm long, the blade narrowly elliptical, acute, 5-6 mm wide, the base cuneate into the petiole. **Inflorescence** a very congested, umbellate, simultaneously 5- to 15-flowered raceme, about 5 mm long, borne by an erect, slender peduncle 10-15 mm long, emerging laterally from above the middle of the ramicaul; floral bracts loose, imbricating, oblique, 1 mm long; pedicels 2 mm long; ovary 0.5 mm long; **sepals** translucent purple, ciliate, broadly ovate-suborbicular, obtuse, the dorsal sepal 1.2 mm long, 1 mm wide, the lateral sepals free to the base, 1 mm long, 1 mm wide; **petals** translucent purple, ciliate, elliptical, acute, 1.2 mm long, 0.5 mm wide; **lip** purple, thick, cellular-glandular, pandurate, obtuse, with the sides near the middle revolute, 1.5 mm long, 1 mm wide, the apex convex and rounded, the base rounded, with a small glenion, attached to the column-foot; **column** cucullate, 0.3 mm long, 0.5 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Without collection data, flowered in cultivation at Colomborquídeas, 4 Apr. 1988, *C. Luer 13092* (Holotype: MO). Dept. of Chocó: Munic. of Bahia Solano, collected by G. Misas, *R. Escobar 1550* (JAUM).
PANAMA: Dept. of Colón: Upper Río Piedras, alt. ca. 300 m, 1981, *R. L. Dressler s.n.* (photo).

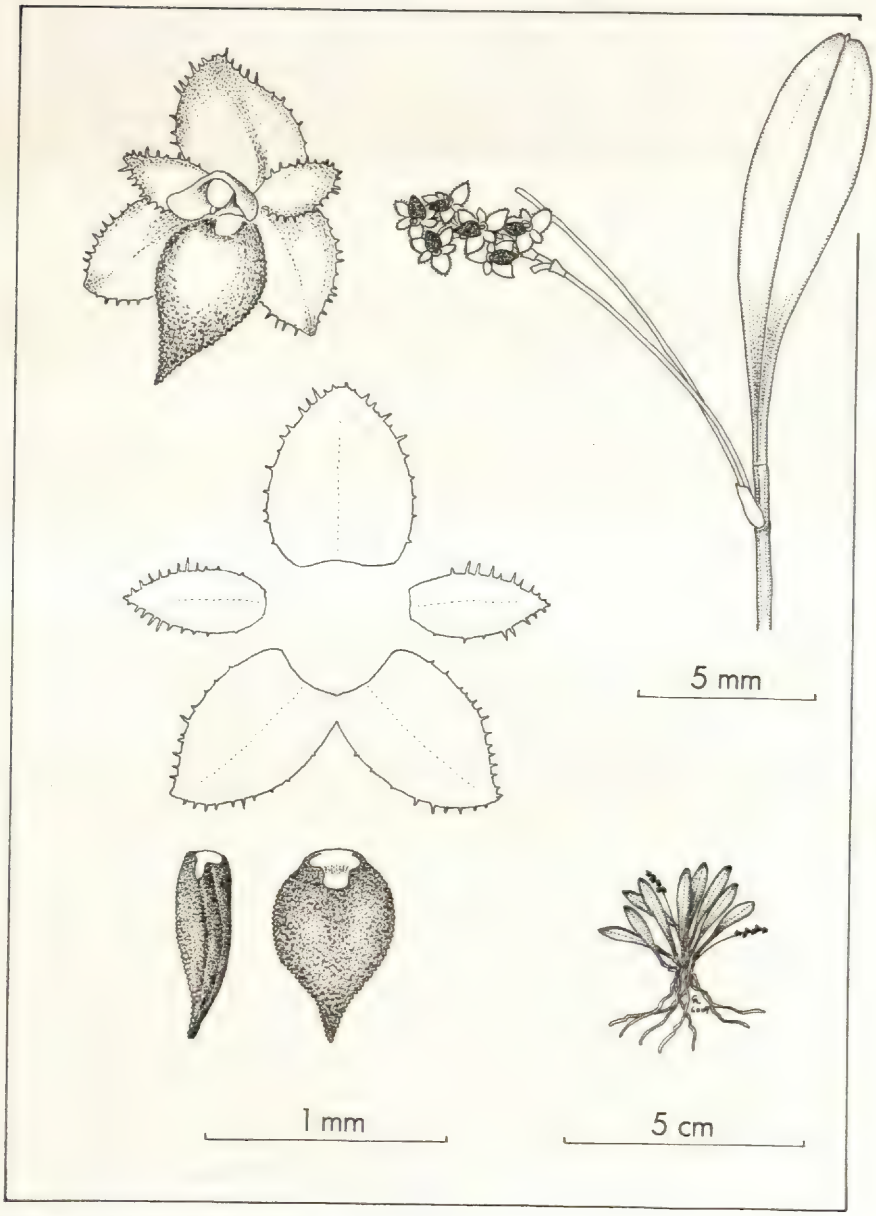

Plate 42. *Platystele ornata* Garay

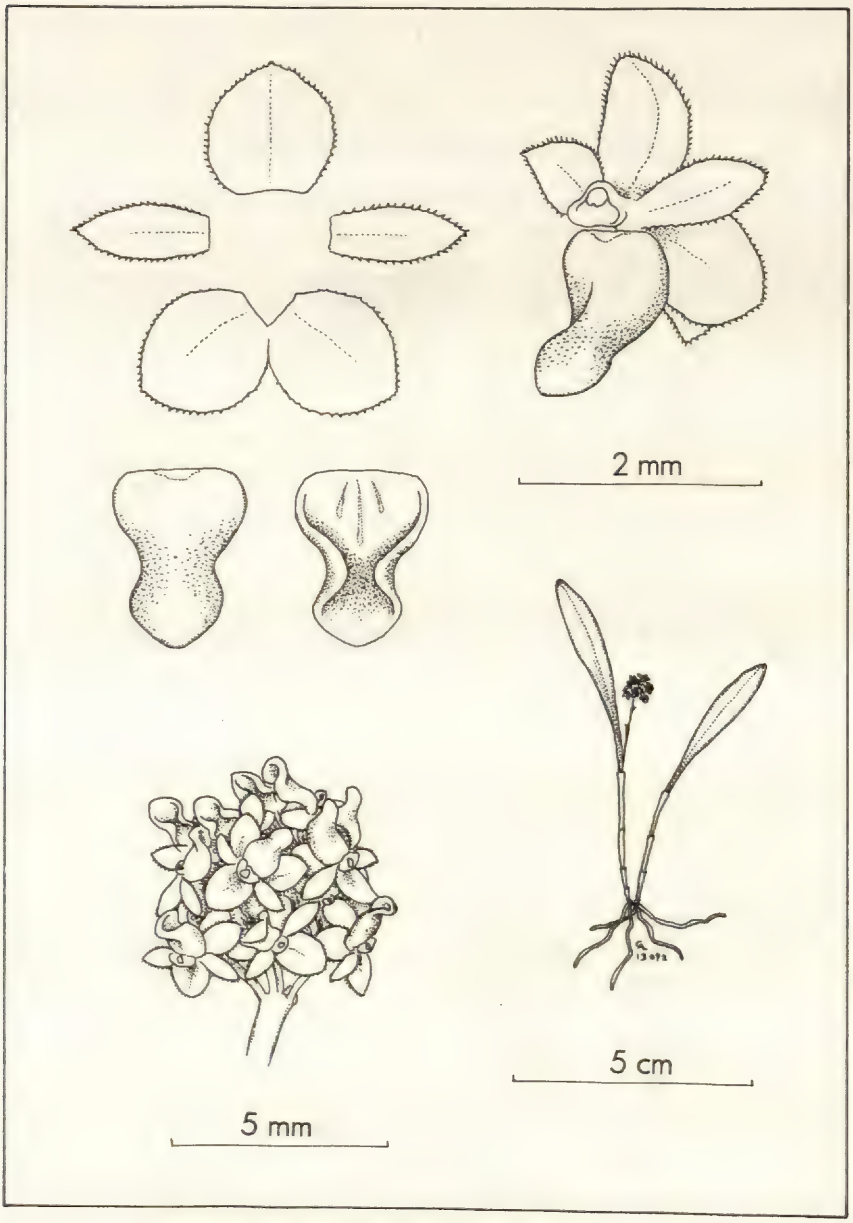

Plate 43. *Platystele ortiziana* Luer & Escobar

A photograph of this species identified as *P. umbellata* was published on page 147 of the article in which *P. umbellata* was described. It occurs near the Pacific coast of Colombia in the Chocó and in adjacent eastern Panama. *Platystele umbellata* occurs in the Central Cordillera.

Similar to that of *P. umbellata* the umbellate inflorescence of *P. ortiziana* is composed of several, overlapping, minute, simultaneous flowers. The tiny, rounded sepals are ciliate, and the ovate lip is about 50% larger with revolute sides that impart a violin shape. The obtuse apex is convex.

Platystele ovalifolia (Focke) Garay & Dunsterv., Venez. Orchid. Ill. 2: 268, 1961.

Bas.: *Stelis ovalifolia* Focke, Tijdschr. Wis.-Natuurk. Wetensch. 2: 202, 1849.

Ety.: From the Latin *ovalifolius*, "with oval leaves," referring to the shape of the leaves.

Syn.: *Pleurothallis ovalifolia* (Focke) Reichb. f., Ann. Bot. Syst. 6: 188, 1861.

Syn.: *Pleurothallis rhomboglossa* Reichb. f., Flora 48: 276, 1865.

Ety.: From the Greek *rhomboglossa*, "a rhomboid tongue," referring to the shape of the lip.

Syn.: *Pleurothallis vaginulata* Griseb., Cat. Pl. Cub. 259, 1866.

Ety.: From the Latin *vaginulatus*, "with little sheaths," referring to the size of the sheaths of the ramicauls and rhizomes.

Plant very small, epiphytic, repent, the rhizomes ca. 1 mm long between ramicauls; roots slender. Ramicauls ascending, stout, 0.5-1 mm long, enclosed by 1-2 thin sheaths. **Leaf** suberect to prostrate, thickly coriaceous, 2-6 mm long including a petiole ca. 0.5 mm long, the blade broadly elliptical to suborbicular, obtuse to rounded, apiculate, 2-2.5 mm wide, the base rounded or cuneate, contracted into the petiole. **Inflorescence** a suberect to erect, loose, successively several-flowered raceme 5-10 mm long including the filiform peduncle up to 5 mm long, emerging laterally from the ramicaul at the base of the leaf; floral bracts thin, 0.5-0.75 mm long; pedicels 0.5-2 mm long; ovary 0.5-0.75 mm long; **sepals** translucent pale yellow, glabrous, the dorsal sepal ovate, acute to subacute, 0.75-1.2 mm long, 0.4-0.7 mm wide, the lateral sepals broadly ovate, oblique, obtuse to subacute, 0.75-1.2 mm long, 0.6-0.8 mm wide, free to the base; **petals** elliptical-oblong, acute to obtuse, 0.6-1.2 mm long, 0.3-0.5 mm wide; **lip** yellow or red, ovate, acute or subacute, 0.75-1 mm long, 0.5-0.6 mm wide, the base subtruncate with a minute, concave glenion, fixed to the column-foot; **column** cucullate, 0.4 mm long, 0.4 mm broad, the stigma bilobed, the foot rudimentary.

GUYANA: Aruka, Nov. 1896, *E. F. Im Thurn 36* (Holotype: K); Arawak, Río Cuyuni, Matope Falls, Oct. 1904, *A. W. Bartlett 8323, 8395* (K); Bartica-Potero Road, 18 Aug. 1937, *N. Y. Sandwith 1122* (K).
FRENCH GUIANA: epiphytic in tall forest, Montagne de Kaw, alt. 300 m, 12 May, 1986, *C. Luer & J. Luer 12228* (MO).
TRINIDAD & TOBAGO: base of Mt. Tamana, 18 Apr. 1920, *N. L. Britton, E. G. Britton & T. E. Hazen 1969* (AMES); without locality, 11 Mar. 1921, *N. L. Britton 2221* (AMES); Arena forest near Cumuto, 3 Dec. 1926, *W. E. Broadway 6433* (AMES, K, MO); Great Dog River Valley, 12 Oct. 1937, *N. Y. Sandwith 1750* (AMES, K).
VENEZUELA: Edo. de Miranda: Guatopo, alt. 2500 ft.; Altaplanicia de Nuria, alt. 1600 ft.
BRAZIL: Amazonas: collected by Joâo da Silva, cultivated by Vitorino Paiva Castro near Sâo Paulo, 24 Nov. 1989, *C. Luer 14470* (MO).
CUBA: near Monteverde, 1859, *Wright 1506* (AMES, G, K, W, type of *P. rhomboglossa*).
PANAMA: Prov. of Coclé: north of Penonomé, road to Coclésito, alt. 1500 ft., 1 May 1979, *B. Hammel 7209* (MO). Prov. of Panamá: epiphytic in cloud forest along the Altos de Pacora road, alt. 650 m, 4 Mar. 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 977* (SEL).
?EL SALVADOR: Dept. Ahuachapán: El Impossible, Cerro Las Campanas, finca San Benito, alt. 1000 m, 28 May 1975, *V. Hellebuyck 470* (AMES, MO). I suspect that this collection is referable to *P. minimiflora*.

This minute, creeping species with tiny, broadly ovate, sessile, more or less prostrate and overlapping leaves usually no more than five millimeters long, forms dense mats sometimes 10 or 20 centimeters across. The tiny yellowish flowers are borne a short distance above the leaves in a successively few-flowered raceme. The flowers are simple with ovate, acute, and entire sepals, petals and lip.

Platystele ovalifolia is relatively frequent and widespread from the Greater Antilles and across coastal northern South America from Panama into the Guianas and Amazonian Brazil. Undoubtedly it occurs undetected in many localities. It is related to the tiny Central American *P. jungermannioides* and *P. minimiflora*, both of which are distinguished by erect, narrowly elliptical leaves. In Panama the lip of *P. ovalifolia* tends to be more narrowly acute, suggesting some closer relationship with the latter two.

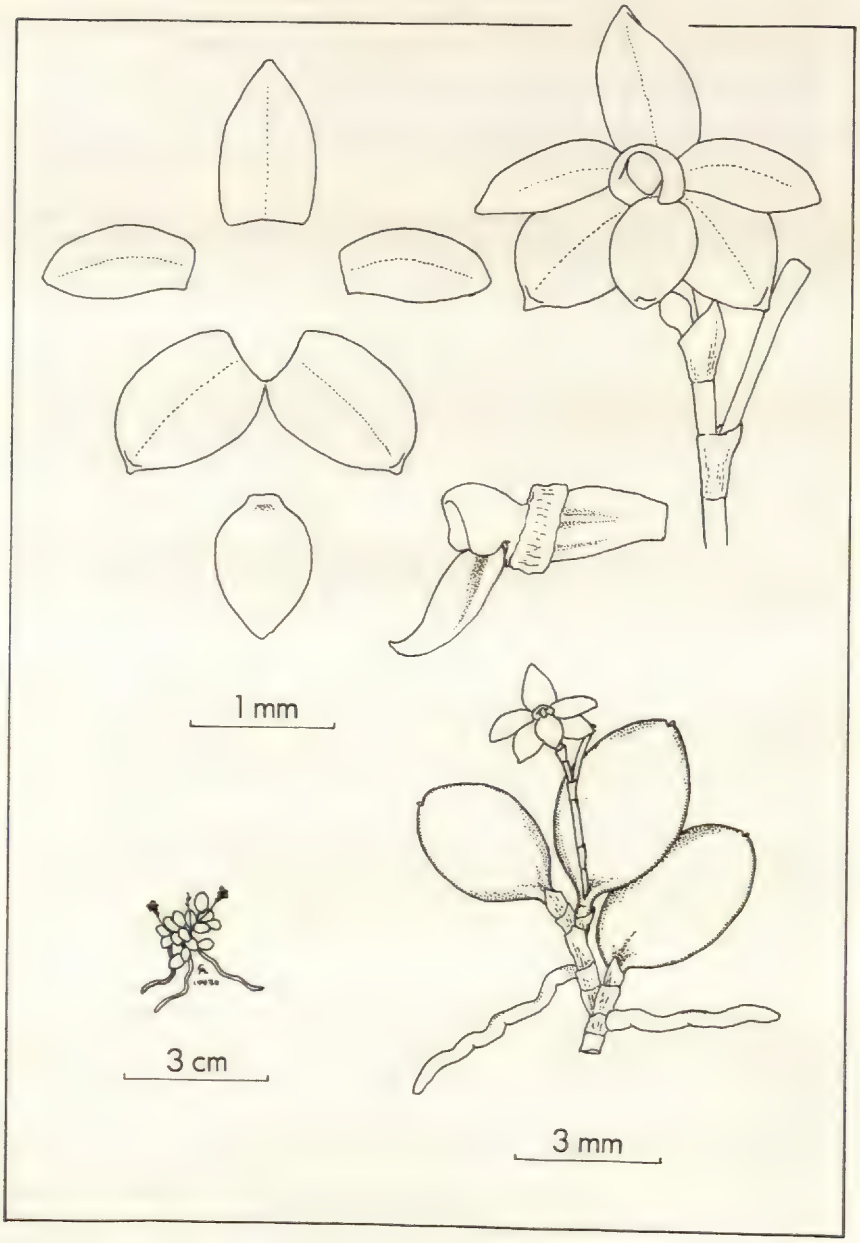

Plate 44. *Platystele ovalifolia* (Focke) Garay & Dunsterv.

Platystele ovatilabia (Ames & Schweinf.) Garay, Orquideología 9: 120, 1974.

Bas.: *Pleurothallis ovatilabia* Ames & Schweinf., Sched. Orchid. 10: 33, 1930.

Ety.: From the Latin *ovatilabius*, "with the lip ovate," referring to the shape of the lip.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 4-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 2-4.5 cm long including a petiole 0.5-1 cm long, the blade narrowly elliptical-obovate, subacute to obtuse, 3-6 mm wide, narrowlycuneate below into the indistinct petiole. **Inflorescence** an erect, subdense, secund, successively many-flowered raceme up to 3 cm long borne by a peduncle 2.5-3 cm long, producing 4-5 flowers simultaneously, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 1.5-2 mm long; ovary 0.5 mm long; **sepals** translucent pale yellow, glabrous, the dorsal sepal ovate, obtuse, subcarinate, 1-1.5 mm long, 0.7-1 mm wide, the lateral sepals ovate, oblique, 1-1.5 mm long, 0.8-1 mm wide, free to near the base; **petals** translucent pale yellow, elliptical, acute, glabrous, 1-1.5 mm long, 0.3-0.5 mm wide; **lip** dark yellow, thick, cellular-papillose, ovate, 1.2-1.5 mm long, 0.8-1 mm wide, the apex round, the base thickened on the end, fixed to the column-foot; **column** cucullate, 0.5 mm long, 0.5 mm broad, the stigma bilobed, the foot rudimentary.

COSTA RICA: Prov. of Cartago: vicinity of Pejivalle, alt. ca. 900 m, 7-8 Feb. 1926, *P. Standley & J. Valerio 47213a* (Holotype: AMES).
MEXICO: Edo. Chiapas: Munic. de Ocosingo, near Laguna Ocotal Grande, alt. 950 m, 20 July 1954, *R. L. Dressler 1437, 1730* (AMES). Finca San Carlos, Cafetal above Tapachula, alt. 1350 m, May 1970, *H. Lange s.n.* (MO).
GUATEMALA: without locality, collected by H. & H. Morgan, flowered in cultivation 28 May 1978, *C. Luer 2910* (SEL).
HONDURAS: Dept. of Comayagua: Pito Solo, Laguna Lojoa, 8 Aug. 1932, *J. B. Edwards 220* (AMES), C. Luer illustr. 14736. Dept. of Copan: Loma del Guano, 6 May 1919, *H. Pittier 8456* (AMES).
PANAMA: Prov. of Chiriquí: Boquete, alt. 1000-1300 m, 4 Mar. 1911, *H. Pittier 2990* (?AMES); Prov. of Coclé: El Valle, collected by H. & H. Morgan, flowered in cultivation 28 May 1978, *C. Luer 2911* (SEL).

This species is found infrequently from southern Mexico into Costa Rica. It is characterized by the small habit; narrowly obovate leaves; a subdense, erect raceme that surpasses the leaf and produces several, minute yellowish flowers simultaneously; ovate, obtuse sepals; acute petals; and an ovate, cellular-papillose lip as large as the lateral sepals.

Platystele oxyglossa (Schltr.) Garay, Orquideología 9: 120, 1974.

Bas.: *Pleurothallis oxyglossa* Schltr., Repert. Spec. Nov. Regni Veg. 10: 354, 1912.

Ety.: From the Greek *oxyglossa*, "a sharply pointed tongue," in reference to the shape of the lip.

Syn.: *Pleurothallis schulzeana* Schltr., Beih. Bot. Centralbl. 36(2): 396,1918.

Ety.: Named in honor of Prof. Max Schulze of Jena, renowned for his work in European orchids.

Syn.: *Pleurothallis pygmaea* Höhne, Bol. Agric. Estado Saô Paulo, 34: 604, 1934.

Ety.: From the Latin *pygmaeus*, "pygmy," in reference to the small size.

Syn.: *Pleurothallis lancilabris* var. *oxyglossa* (Schltr.) C. Schweinf., Bot. Mus. Leafl. 6: 200, 1938.

Syn.: *Platystele brasiliensis* Brade, Arch. Jard. Bot. Rio de Janeiro 11: 73, 1951.

Ety.: Named for the country of origin, Brazil.

Syn.: *Platystele pygmaea* (Hoehne) Garay, Rodriguesia 18-19: 30, 1956.

Syn.: *Platystele schulzeana* (Schltr.) Garay, Orquideología 9: 120, 1974.

Plant small to very small, epiphytic, shortly repent and caespitose; roots slender. Ramicauls erect, slender, 1-3 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 8-25 mm long including a petiole 3-10 mm long, the blade elliptical-obovate to narrowly

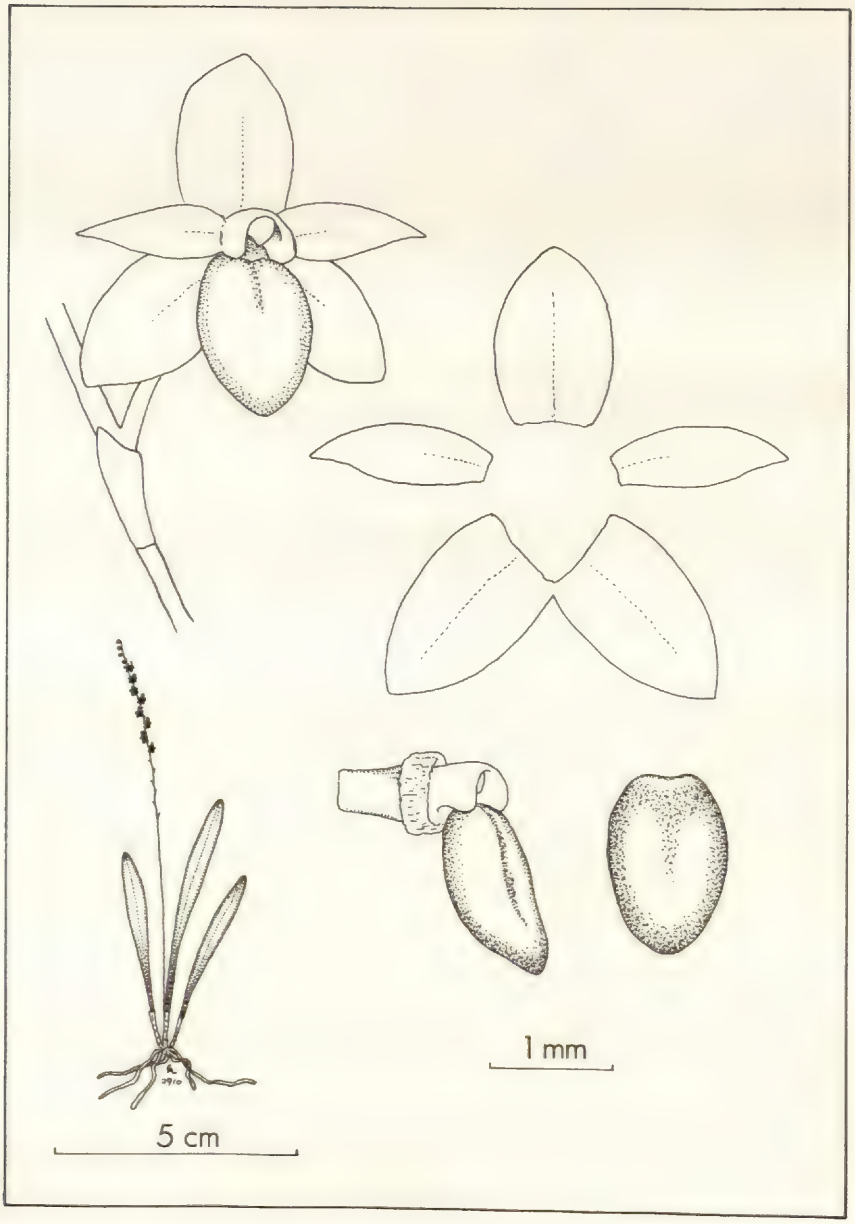

Plate 45. *Platystele ovatilabia* (Ames & Schweinf.) Garay

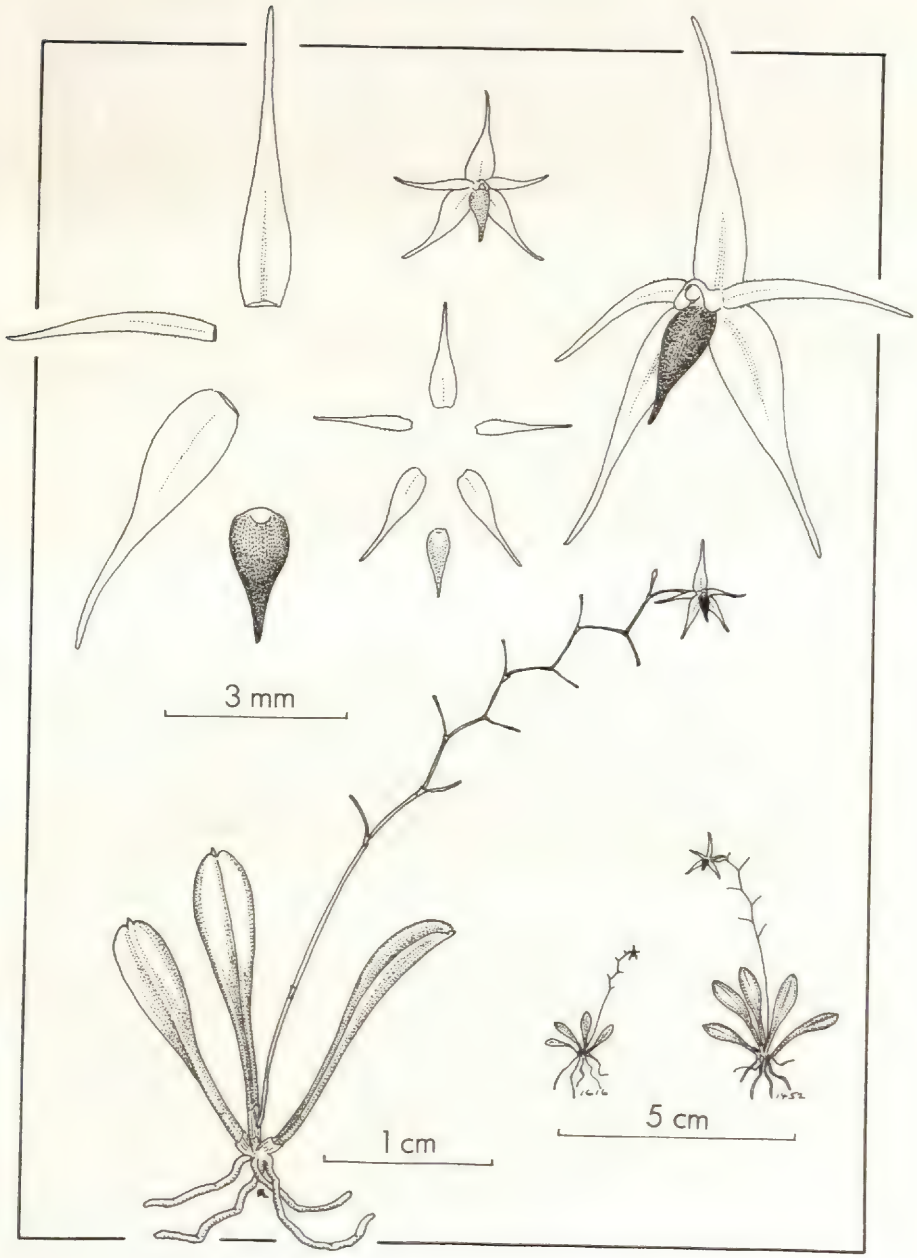

Plate 46. *Platystele oxyglossa* (Schltr.) Garay

elliptical-obovate, subacute to obtuse, 3-5 mm wide, cuneate to narrowly cuneate below into the petiole. **Inflorescence** a weak, suberect, loose, more or less flexuous, distichous, successively several-flowered raceme up to 4 cm long including the filiform peduncle 1-2 cm long, from the ramicaul; floral bracts thin, 0.5-1 mm long; pedicels 1.5-4 mm long; ovary 0.3-0.6 mm long; **sepals** translucent light yellow-green, sometimes suffused with purple, especially along the midvein, glabrous, sometimes microscopically cellular-glandular on the margins, ovate, acute, acuminate, the dorsal sepal 1.75-5 mm long, 0.5-1 mm wide, the lateral sepals oblique, 1.75-5 mm long, 0.5-1 mm wide, free to the base; **petals** translucent light yellow-green, glabrous, sometimes microscopically cellular-glandular on the margins, narrowly linear-ovate, slightly curved, acute, 1.2-3.5 mm long, 0.15-0.5 mm wide; **lip** red-purple, brown or green, microscopically cellular-glandular, ovate, acute, acuminate, 1.25-2 mm long, 0.5-1 mm wide, the base truncate with a glenion, attached to the column-foot; **column** cucullate, 0.5-0.8 mm long and broad, the stigma bilobed, the foot rudimentary.

MEXICO: Edo. Chiapas: south of Palenque toward Bonampak, alt. 300 m, 12 May 1982, *G. Davidse, N. Sousa, A. Chater & F. Cabrera 20368* (MO). Edo. Oaxaca: Cuicatlán, Cerro Machin, San Juan Zautla, alt. 450 m, 29 June 1939, *R. E. Schultes 738* (AMES).
GUATEMALA: Dept. of Alta Verapaz: near Cobán, alt. 1500 m, Feb. 1908, *H. von Türckheim no. II, 2422a* (Holotype: ?); Finca Chajsel near Cobán, alt. 1500 m, collected by H. Ibañez, flowered in cultivation in Cobán, 14 Feb. 1990, *C. Luer 14658* (MO).
EL SALVADOR: Cerro Montecristo, alt. 2300 m, *F. Hamer s.n.* (Herb. F. Hamer).
NICARAGUA: Prov. of Jinotega: Bocaycito, *J. Atwood 106* (MO).
COSTA RICA: Prov. of Alajuela: between San Ramón and Balsa, alt. 1100 m, 10 Sept. 1979, *W. D. Stevens 14090* (MO). Prov. of Cartago: Montaña del Caracol near Cartago, alt., 2000 m, 30 Jan. 1882, *F. C. Lehmann 1190* (G). Prov. of Limón: Cordillera de Talamanca, Atlantic slope, alt. 2100-2600 m, 10 Sept. 1984, *G. Davidse, G. Herrera & M. Grayum 28802* (MO). Prov. of San José: Carpintera, alt. 1800 m, Apr. 1908, *C. Brade s.n.* (type of *P. schulzeana*, ?); same area, alt. 2100 m, 23 Mar. 1986, *C. Luer, J. Luer, T. Linder & W. Rhodehamel 12144* (MO).
where? damp forest above Tabosi, alt. 2000 m, 25 Jan. 1882, *F. C. Lehmann 1140* (G).
PANAMA: Prov. of Chiriquí: epiphytic on Cerro Colorado, alt. ca. 1800 m, 16 Feb. 1977, *C. Luer, J. Luer & R. L. Dressler 1452* (SEL); Cerro Colorado, alt. 1600-1700 m, 14 May 1977, *J. P. Folsum, G. Small & R. Robbins 4750* (MO). Prov. of Coclé: hills above El Valle de Antón, 23 Nov. 1967, *R. L. Dressler 3204* (MO). Prov. of Panama: Cerro Jefe, alt. 200-800 m, 30 Sept. 1978, *B. Hammel 4830* (MO). Prov. of Veraguas: near Santa Fé, alt. ca. 1000 m, 1 Mar. 1976, *R. L. Dressler 5193* (SEL).
COLOMBIA: Dept. of Antioquia: Munic. of Yarumal, above El Cedro, alt. 1850 m, 15 Mar. 1989, *C. Luer, J. Luer, S. Dalström & W. Teague 14175* (MO). Dept. of Cauca: Cerro Munchique, alt. 2400 m, 3 Mar. 1884, *F. C. Lehmann 3623* (G). Dept. of Chocó: San José del Palmar, 12 Jan. 1984, *F. A. Silverstone-Sopkin, N. Paz, A. Duque & H. Bayone 1753* (MO).
VENEZUELA: Edo. Carabobo: Río San Gián, alt. 350-500 m, 7 Aug. 1965, *J. Steyermark 68949* (VEN); Edo. Miranda: Guatopo, Aug. 1953, G. C. K. Dunsterville 128. Edo. Sucre: Peninsula de Paria, Cerro de Humo, alt. 1060 m, 1 Mar. 1966, *J. Steyermark 94817* (VEN); Cerro de Humo, alt. 700-800 m, 11 Aug. 1966, *J. Steyermark & M. Rabe 96332, 96363* (VEN). Terr. Fed. Amazonas: Río Negro, alt. 530-550 m, 14 Nov. 1982, *F. Guanchez 2234* (VEN).
ECUADOR: Prov. of Imbabura: Selva Alegre, alt. 1400 m, May 1989, *A. Hirtz & X. Hirtz 4239* (MO). Prov. of Napo: epiphytic in forest along the new road between Archidona and Coca, alt. 1200 m, 13 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11233* (MO). Prov. of Morona-Santiago: Cordillera del Cutucú, between Mendez and Morona, alt. 950 m, 17 Jan. 1989, *C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz 13964* (MO). Prov. of Zamora-Chinchipe: epiphytic in forest between Gualaquiza and Zamora, alt. 900 m, 27 Mar. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 10972* (MO); Cordillera del Condor: east of Los Encuentros, alt. 1500 m, *C. Luer, J. Luer, P. Jesup & A. Jesup 14033* (MO).
PERU: Dept. of Amazonas: Vilcaniza, alt. 1500 m, collected by C. Head, flowered in cultivation at J. & L. Orchids, Easton, CT., 10 Dec. 1988, *C. Luer 13812* (MO).
BOLIVIA: Dept. of La Paz: Prov. of Larecaja, between Guanay and Tipuani, alt. 1200 m, 23 Jan. 1988, *C. Luer, J. Luer, R. Vasquez & J. Solomon 12922* (MO).
BRAZIL: Edo. Espirito Santo, Forno Grande, alt. 1000 m, May 1949, *A. C. Brade 19794* (RB, type of *P. brasiliensis*); Petropolis, Aug. 1930, *M. Vogel s.n.* (herb. bot. agr., type of *P. pygmaea*).

Platystele oxyglossa is the most widely distributed species of the genus, forms of which are encountered throughout much of tropical America. It is remarkably variable in size vegetatively and florally, but it would be impracti-

cal to give each variation a specific epithet. The shapes of the floral parts remain reasonably constant. Tiny forms with sepals barely longer than one millimeter are apparently found throughout the range. The lip, however, is more constant in size, but it becomes proportionately smaller in flowers with larger sepals and petals. A tiny taxon with sepals about 1 mm long with the lip larger than the sepals has been segregated into *P. taylorii*.

In many floras *P. oxyglossa* has been considered a synonym of the earlier described *P. lancilabris*, and it is labeled as such in many herbaria. Some forms may approach *P. lancilabris*, but *P. oxyglossa* is identified by the shorter, more or less flexuous raceme of successive flowers with ovate, acuminate floral parts. The raceme of *P. lancilabris* is strict with simultaneous flowers with ovate, non-acuminate sepals.

Platystele pedicellaris (Schltr.) Garay, Orquideología 9: 120, 1974.

Bas.: *Pleurothallis pedicellaris* Schltr., Repert. Spec. Nov. Regni Veg. 10: 395, 1912.

Ety.: From the Latin *pedicellaris*, "(long-)pedicelled," referring to the prominent pedicels.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 2-3 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 10-20 mm long including the petiole 2-4 mm long, the blade narrowly elliptical, subacute, 3-4 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a congested, distichous, successively several-flowered raceme up to 15 mm long, borne by an erect, slender peduncle 10-15 mm long, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 3-4 mm long; ovary 1 mm long; **sepals** translucent light yellow, ovate, acute, slightly acuminate, with microscopically cellular margins, the dorsal sepal 2-6 mm long, 1-2 mm wide, 1-veined, the lateral sepals oblique, 2-6 mm long, 1.3-2 mm wide, free to the base; **petals** translucent light yellow, minutely ciliate, elliptical-obovate, oblique, acute, slightly acuminate, 2.5 mm long, 1 mm wide; **lip** red, ovate, acute, 1-2 mm long, 0.75 mm wide, the base truncate with a small glenion; **column** cucullate, 0.75 mm long and broad, the stigma bilobed, the foot 0.5 mm long.

GUATEMALA: Dept. of Alta Verapaz: epiphytic near Cobán, alt. 1350 m, June 1907, *H. von Türckheim no. II, 2423* (Holotype: AMES); Finca Volcán, alt. 2000 ft., 22 Feb. 1939, *C. L. Wilson 239* (AMES); Senahu, alt. 1100 m, 17 Feb. 1981, *C. Luer, J. Luer, M. Dix & M. Dix 5852* (SEL); Finca Chajsel near Cobán, alt. 1300 m, 14 Feb. 1990, *C. Luer, J. Luer & M. Behar 14659* (MO).

This little species is apparently endemic in Guatemala, having been first collected by von Türckheim early in this century. It is easily distinguished from its close relative, the frequent and widely distributed *P. oxyglossa*, by the long-pedicellate, congested, non-flexuous raceme, and the relatively broad, minutely ciliate petals. Flowers vary greatly in size, the sepals and petals ranging in length from 2 millimeters to 6 millimeters. The larger-flowered forms have been confused with the Costa Rican *P. propinqua*.

Platystele perpusilla (Reichb. f.,) Garay, Orquideología 9: 120, 1974.

Bas.: *Pleurothallis perpusilla* Reichb. f., in Seemann, Bot. Voy. H.M.S.Herald 215, 1854.

Ety.: From the Latin *perpusillus*, "very small," referring to the habit of the plant.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-10 mm long, enclosed by 2-3 thin, loose, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 15-30 mm long including a petiole 4-5 mm long, the blade narrowly obovate, subacute, 4-5 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect, distichous, loose simultaneous-

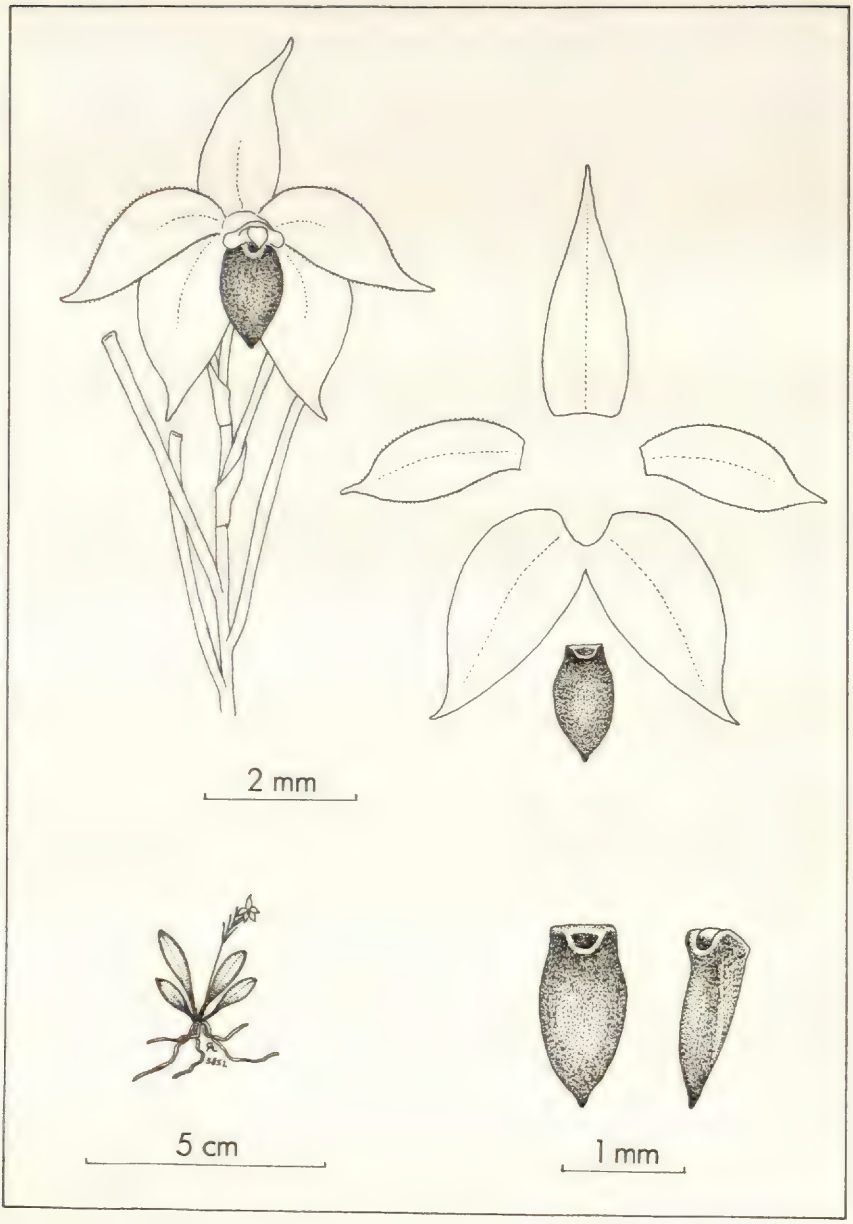

Plate 47. *Platystele pedicellaris* (Schltr.) Garay

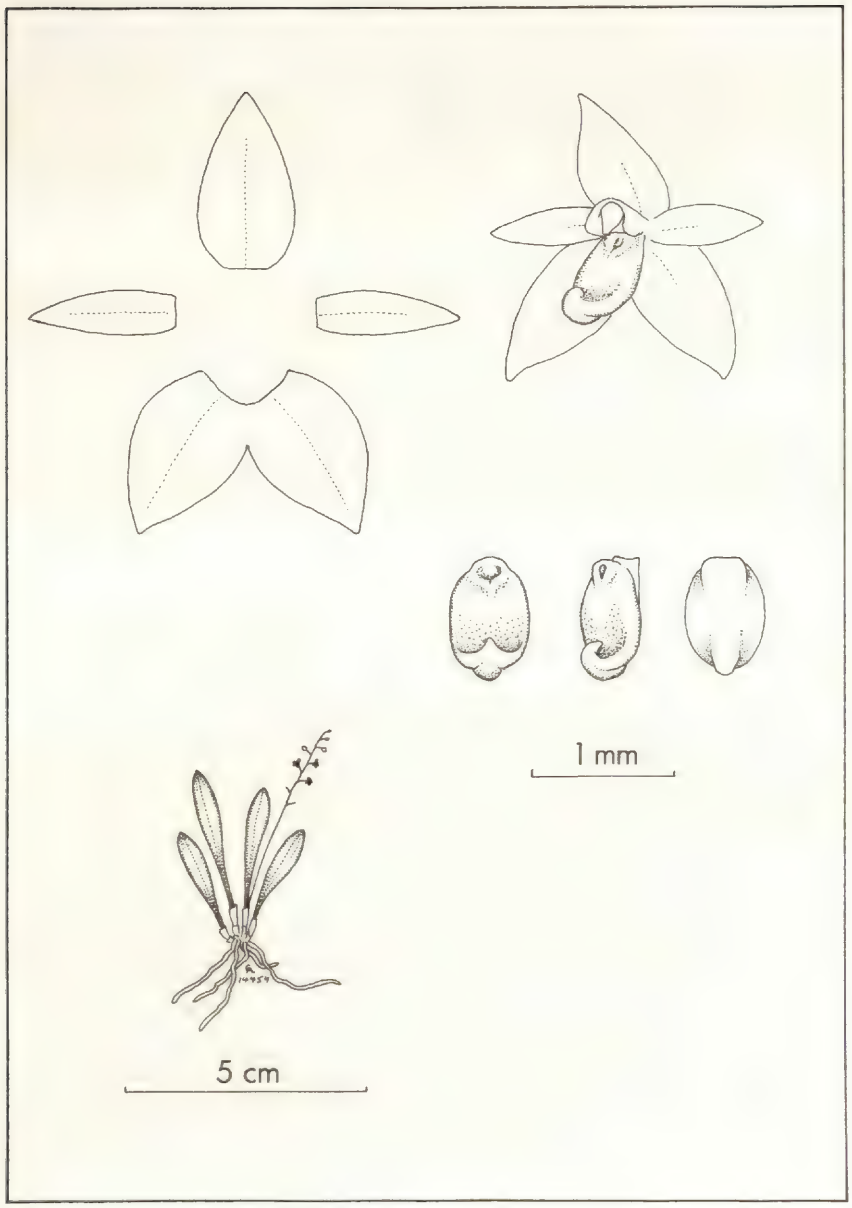

Plate 48. *Platystele perpusilla* (Reichb. f.) Garay

ly several-flowered raceme up to 4.5 cm long including the filiform peduncle 2-2.5 cm long, emerging laterally from low on the ramicaul; floral bracts thin, 0.5-1 mm long; pedicels 1-1.5 mm long; ovary 0.3 mm long; **sepals** translucent greenish yellow, glabrous, ovate, acute, 1-veined, the dorsal sepal 1.2 mm long, 0.6 mm wide, the lateral sepals 1.2 mm long, 0.8 mm wide, connate near the base; **petals** narrowly ovate, acute, 1 mm long, 0.3 mm wide, 1-veined; **lip** thick, cellular-glandular, ovoid-uncinate, 1.5 mm long, 0.5 mm wide, the disc with a basal glenion, the apex acute and incurved with a longitudinal thickening extending from the back surface, the base subtruncate, broadly fixed to the rudimentary column-foot; **column** cucullate, 0.3 mm long and broad, the stigma bilobed, the foot rudimentary.

PANAMA: Prov. of Chiriquí: Boquete, Feb. 1848, *Dr. Seemann 1565* (Holotype: BR; Isotype: K).
COSTA-RICA: Prov. of Puntarenas: foothills of the Cordillera de Talamanca between Sitio Cotón and Mellizas, alt. 1300-1450 m, 11 Mar. 1984, *G. Davidse, L. D. Gómez, G. Herrera, C. R. Chacón, I. & A. Chacón 25582* (MO), C. Luer illustr. 14454.

This apparently rare, little species was first collected in western Panama by Dr. Seemann in the last century. It is not known to have been recollected in Panama, but it is now known by a recent collection from nearby Costa Rica. Although not really "excavato" as described by Reichenbach, the lip is faithfully represented by his simple sketch published in *Xenia Orchidacea*.

Platystele perpusilla is distinguished by the little tuft of narrowly obovate leaves topped by a slender, several-flowered raceme that produces three or four tiny flowers simultaneously. The sepals and petals are simple, each about one millimeter long. The habit is reminiscent of *P. lancilabris*, not *P. oxyglossa*. The distinctive ovoid lip is thickened at the apex by a low, longitudinal callus that extends from the back surface around the end into the acute, incurved tip.

Platystele phasmida Luer & Escobar, Orquideología 16: 42, 1986.

Ety.: Named for the fancied similarity of the flowers to walking sticks, insects belonging to the order Phasmida. Phasmida from the Greek *phasma*, "a phantom," referring to a fancied appearance of the insect.

Plant medium in size, epiphytic, densely caespitose; roots fleshy. Ramicauls erect, slender, 3-10 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, long-petiolate, 20-40 mm long including a petiole 10-20 mm long, the blade elliptical with the apex obtuse to rounded, 7-13 mm wide, the base cuneate into the petiole. **Inflorescence** an erect, loose, secund, successively several-flowered raceme with 2-4 flowers open simultaneously, up to 15 mm long including the slender peduncle up to 8 cm long, emerging laterally from the ramicaul; floral bracts thin, 2 mm long; pedicels 2.5-3 mm long; ovary 1 mm long; **sepals** light purple, long-pubescent, carinate, with the margins revolute, the dorsal sepal narrowly triangular, with the acute apex long-attenuate, 20 mm long, 2 mm wide expanded, 3-veined, the lateral sepals similar, 21 mm long, 1.5 mm wide, connate 1.5 mm; **petals** purple, verrucose-pubescent, ciliate, triangular, acute, 1.5 mm long, 0.75 mm wide; **lip** purple, pubescent, ovate-cordate, 3 mm long, 1.5 mm wide, the apex rounded and concave with involute margins toward the center of the disc, the disc with a circular, shallowly cleft, pubescent callus at the base, the basal lobes erose, narrowly obtuse, embracing the column, the base fixed to the column-foot; **column** cucullate, 0.5 mm long, nearly 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Munic. of Jardín, quebrada La Cifuentes, alt. 2430 m, 28 Aug. 1984, *R. Escobar, L. & J. Posada, F. López, C. Head & J. Cardenas 3404* (Holotype: JAUM; Isotype: MO).

This species is distinguished from the other three species in subgenus *Teagueia* by the extremely narrow, pubescent sepals and the pubescent lip. All four species have the dorsal sepal three-veined, and the lip with a concave apex. *Platystele phasmida* is apparently rare and local, having been collected but once.

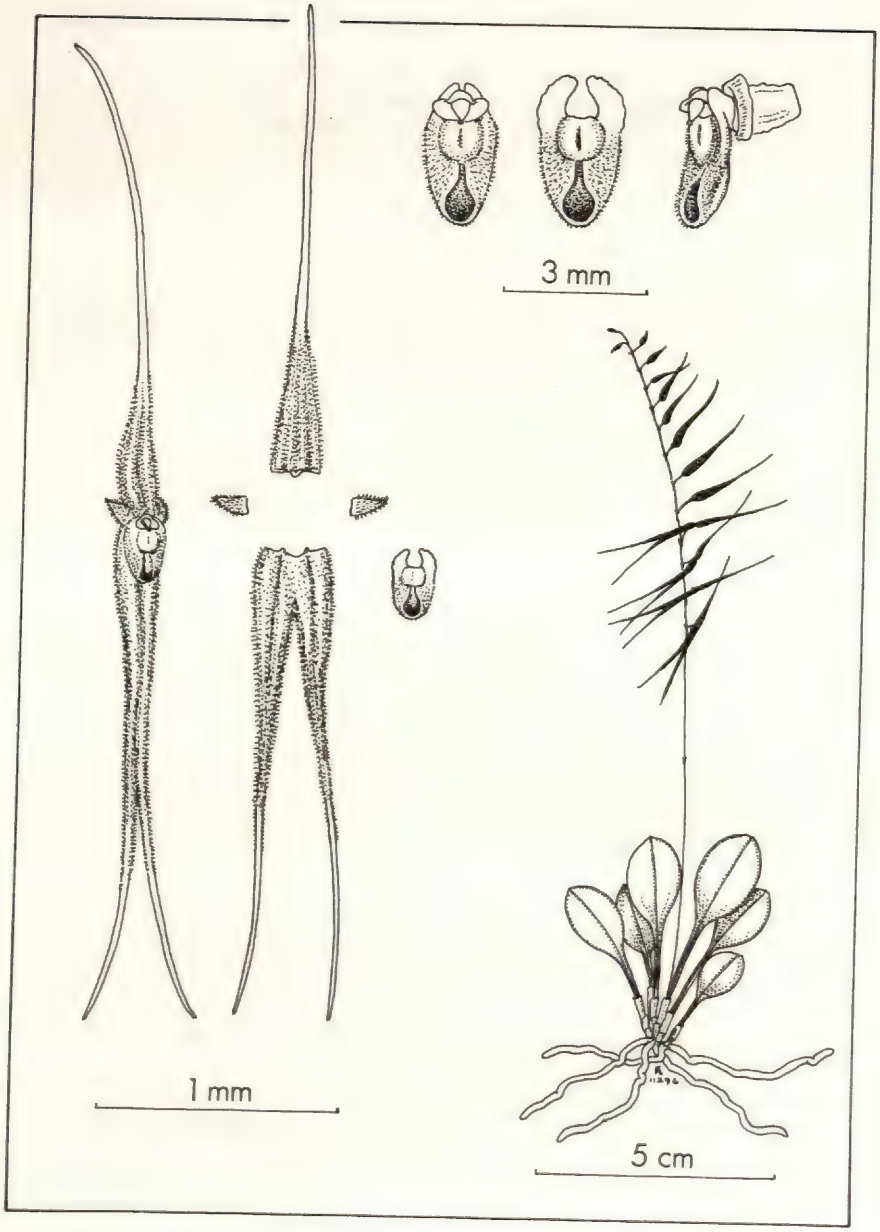

Plate 49. *Platystele phasmida* Luer & Escobar

Platystele pisifera (Lindley) Luer, Selbyana 3: 232, 1977.

Bas.: *Pleurothallis pisifera* Lindley, Folia Orchid. *Pleurothallis* 36, 1859.

Ety.: From the Latin *pisifer*, "pea-bearing," in allusion to the "fruit globular, smaller than the smallest peas."

Syn.: *Humboldtia pisifera* (Lindley) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Platystele hypsitera* Luer & Escobar, Orquideología 16(1): 14, 1983.

Ety.: From the Greek *hypsiteros*, "higher" referring to the higher altitudes where this species occurs as compared to the altitudes where *P. oxyglossa* is found.

Plant small, epiphytic, densely caespitose; roots coarse. Ramicauls erect to suberect, slender, 3-7 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 10-40 mm long including a petiole 3-10 mm long, the blade narrowly elliptical-obovate, subacute to obtuse, 4-8 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect to suberect, subcongested, strict, successively several to many-flowered raceme 3-6 cm long including the slender peduncle 1.5-2.5 cm long, emerging laterally from the ramicaul; floral bracts oblique, 1 mm long; pedicels 4-6 mm long; ovary 1 mm long; **sepals** translucent yellow or rose, minutely ciliate, subcarinate, ovate, acute, acuminate, the dorsal sepal 5.5 mm long, 1.3 mm wide, the lateral sepals oblique, 5.5 mm long, 1.8 mm wide, free to the base; **petals** yellow or rose, minutely ciliate, narrowly ovate, slightly curved, acute, 4 mm long, 0.9 mm wide; **lip** purple, ovate, acute, 3 mm long, 1 mm wide, the base truncate with a small glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long and broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Azuay: "Surucucho," near Cuenca, 23 Oct. 1839, *Jameson s.n.* (Holotype: K); same area, alt. 3000 m, 10 Jan. 1958, *C. H. Dodson 287A* (SEL); same area, 2 Mar. 1977, *C. Luer, J. Luer & K. Cordoba 1496A* (SEL); Río Cumbe south of Cumbe, alt. 2900-3000 m, 9 June 1979, *B. Løjtnant, A. & U. Molau 14354* (GB). Prov. of Bolívar: epiphytic in cloud forest north of Chillanes, alt. 2650 m, 25 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9710* (K, MO). Prov. of Pichincha: cloud forest along the new road between Quito and Santo Domingo, alt. 1950 m, 30 Mar. 1984, *C. Luer, S. Dalström, T. Höijer, J. Kuijt & A. Hirtz 9831* (MO).
COLOMBIA: Dept. of Santander: Munic. of Vetas, epiphytic in cloud forest above La Baja, alt. 2600 m, 20 May 1982, *C. Luer, R. Escobar & D. Portillo 7898* (Holotype: SEL). Dept. of Cundinamarca: Usaquén, alt. 2700-2800 m, 12 Oct. 1951, *M. Schneider 166* (S). Dept. of Norte de Santander: between Alto del Oro and Alto de Santa Inez, alt. 1800-2200 m, 21 Oct. 1941, *R. E. Schultes, E. Smith & J. Cuatrecasas 12542* (AMES, COL, US); south of Abrego, 19 Dec. 1943, *F. J. Hermann 10918* (AMES); epiphytic in subparamo cloud forest below Paramo de Jurisdicciones, alt. 2750 m, 30 Apr. 1982, *C. Luer, J. Luer, R. Escobar & D. Portillo 7667* (SEL); same area, 10 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10226* (MO); Alto de San Francisco, alt. 2850 m, 11 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10281* (MO); Alto de Santa Inéz, alt. 2250 m, 13 May 1984, *C. Luer, J. Luer, R. Escobar & E. Valencia 10333* (MO).
VENEZUELA: Edo. Táchira: Dist. Junín, Cerro San Isidro, Quebrada Aqua Caliente, alt. 2000 m, 13 Nov. 1982, *G. Davidse & A. Gonzales 22230* (MO, VEN); headwaters of Río Quinimarí, alt. 2500-2600 m, 11 Jan. 1968, *J. Steyermark & G. C. K. Dunsterville 100668, 100791* (VEN).
PERU: Dept. of Cuzco: Urubamba, Salapunco, alt. 2400 m, 25 Mar. 1946, *C. Vargas 5987* (AMES).
BOLIVIA: Dept. of La Paz: Prov. of Sud Yungas: Río Unduavi, alt. 3000 m, 6 Feb. 1980, *C. Luer, J. Luer & R. Vásquez 5133* (SEL). Dept. of Cochabamba: Prov. of Chapare, between Cochabamba and Villa Tunari, alt. 1200 m, 17 Jan. 1988, *C. Luer, J. Luer, R. Vásquez, T. & D. Mulder, & A. Vogel 12853* (MO).

This species was first collected over a century ago by Dr. Jameson around the high, cold, alpine Lake Zorrogucho above Cuenca where it is still to be found today. It occurs frequently at high altitudes from Venezuela through all three cordilleras of Colombia, and the Andes of Ecuador, Peru, and Bolivia.

It is closely allied to *P. acicularis* with which it is sympatric in Ecuador, and *P. stonyx* with which it is sympatric in Colombia. *Platystele pisifera* is distinguished from both by the shorter, more or less crowded, non-flexuous inflorescence, and an ovate, acute, non-channeled lip. A confusion with what is now described as *P. acicularis* led to the description on *P. hypsitera*.

Florally *P. pisifera* is more similar to the smaller, widely distributed *P. oxyglossa* of lower altitudes. From the latter, *P. pisifera* is identified by the larger, usually more robust habit; somewhat congested, non-flexuous racemes; and minutely ciliate sepals and petals.

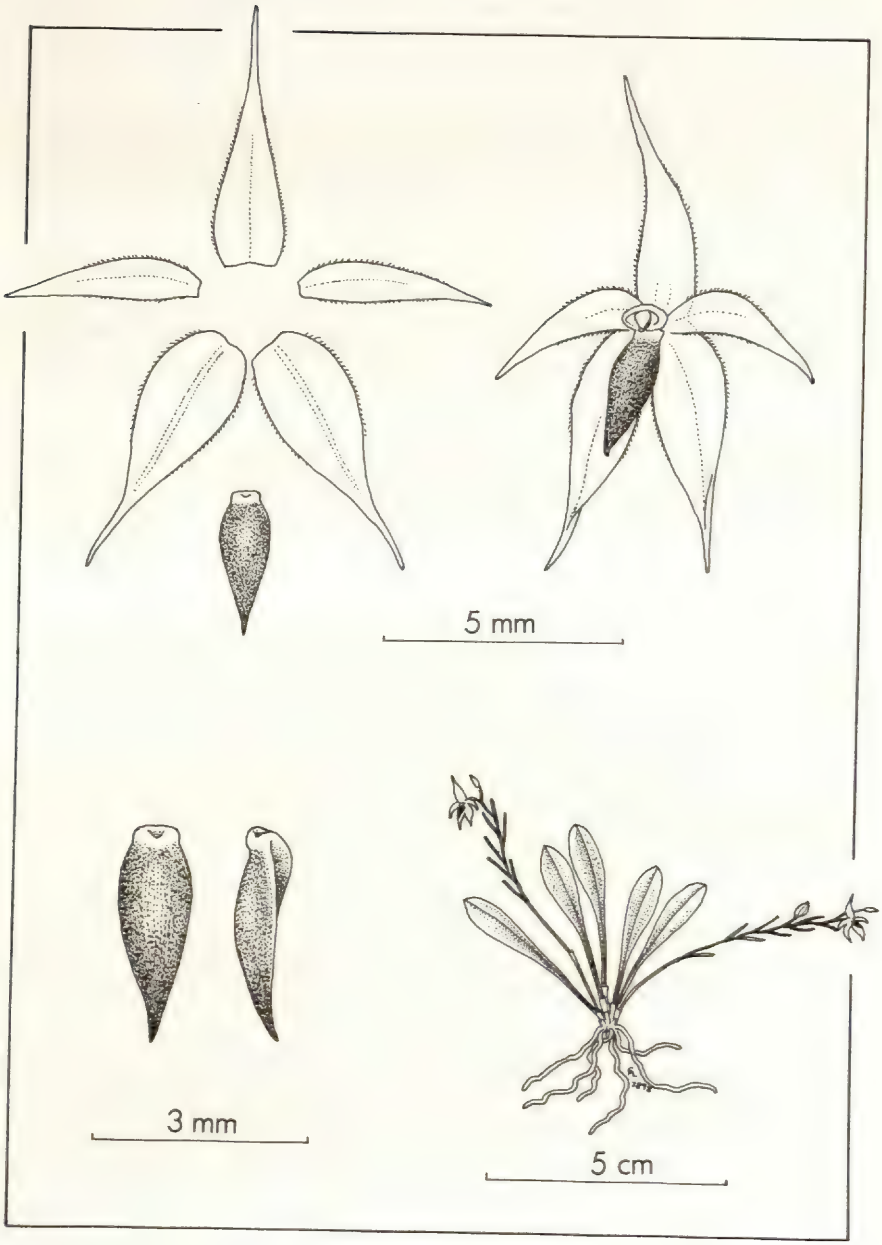

Plate 50. *Platystele pisifera* (Lindley) Luer

Platystele posadarum Luer & Escobar, sp. nov.

Ety.: Named for Sr. and Sra. Jaime Posada, owners of Colomborquídeas, who discovered and cultivated this species.

Species haec *P. microglossae* P. Ortiz affinis, sed sepalis longissime caudatis et labello obtuso multimajore differt.

Plant very small, epiphytic, caespitose; roots comparatively coarse. Ramicauls erect, 2-3 mm long, enclosed by 2 thin, imbricating sheaths. **Leaf** erect, coriaceous, shortly petiolate, 15-18 mm long including the petiole 4-5 mm long, the blade elliptical, subacute to obtuse, 4-6.5 mm wide, cuneate below into the petiole. **Inflorescence** a suberect, loose, successively few-flowered raceme up to 3 cm long including the filiform peduncle ca. 1 cm long, emerging from the ramicaul; floral bracts thin, 1.5 mm long; pedicels 4-5 mm long; ovary 1 mm long; **sepals** and petals translucent pale yellow, lightly suffused with rose, the margins minutely ciliate, the dorsal sepal ovate, acute, acuminate, long-caudate, 13 mm long, 2.6 mm wide, the lateral sepals ovate, oblique, acute, acuminate, long-caudate, 12 mm long, 3.6 mm wide, free to near the base; **petals** ovate, oblique, acute, acuminate, 6 mm long, 2.3 mm wide; **lip** dark purple, elliptical, obtuse, 2.5 mm long, 1.1 mm wide, the disc slightly sulcate, the base with a glenion, subtruncate, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Risaralda: Mistrató, collected by L. & J. Posada, flowered in cultivation at Colomborquídeas 18 Apr. 1982, *C. Luer 7451* (Holotype: SEL).

This little species was discovered by Ligia and Jaime Posada and cultivated at Colomborquídeas near Medellín. It is not known to have been collected elsewhere. The flowers are large for the small size of the plant. The sepals are long-caudate and minutely ciliate. The lip is elliptical and obtuse. *Platystele posadarum* is closely related to *P. microglossa*, but the floral parts of the latter are only half as long, and the tiny lip is acute. *Platystele posadarum* is also related to *P. caudatisepala*, but the sepals and petals of the latter are narrow, and the lip is acute.

Platystele propinqua (Ames) Garay, Caldasia 10: 233, 1968.

Bas.: *Pleurothallis propinqua* Ames, Sched. Orchid. 6: 68, 1923.

Ety.: From the Latin *propinquus*, "neighboring," referring to the similarity to some other species of the genus.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 3-5 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 10-22 mm long including the petiole 2-4 mm long, the blade narrowly elliptical-obovate, subacute, 4-5 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a loose, distichous, successively several-flowered raceme up to 12 mm long, borne by an erect, slender peduncle 10-25 mm long, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 2-4 mm long; ovary 1 mm long, tricostate; **sepals** translucent purple, ovate, acute, acuminate, the dorsal sepal 4.75-5.5 mm long, 1.5-1.75 mm wide, 1-veined, the lateral sepals oblique, 4.75-5 mm long, 1.5 mm wide, free to the base; **petals** purple, narrowly ovate, oblique, acute, acuminate, 4-5 mm long, 0.6-1 mm wide; **lip** deep purple, thick, ovate, acute, acuminate, 3.5-5 mm long, 1.25-1.75 mm wide, the base truncate with a broad glenion; **column** cucullate, 1 mm long and broad, the stigma bilobed, the foot 0.5 mm long.

COSTA RICA: Prov. of Heredia: Vara Blanca between Poás and Barba volcanoes, 22 July, 1923, *W. R. Maxon & A. D. Harvey 8268* (Holotype: US; AMES); same area, July 1923, *O. Jimenez & R. Maxon 2072* (AMES); same area, alt. 1800 m, 15 Sept. 1979, *C. Luer, J. Luer & K. Walter 4189* (SEL); near Monte de la Cruz, 1 Feb. 1970, *R. L. Dressler 3788* (MO); Volcán Barba near Concepción, alt. 1820 m, 20 Mar. 1986, *C. Luer, J. Luer, T. Linder & W. Rhodehamel 12123* (MO). Without locality, 1884, *A. Endres s.n.* (AMES).

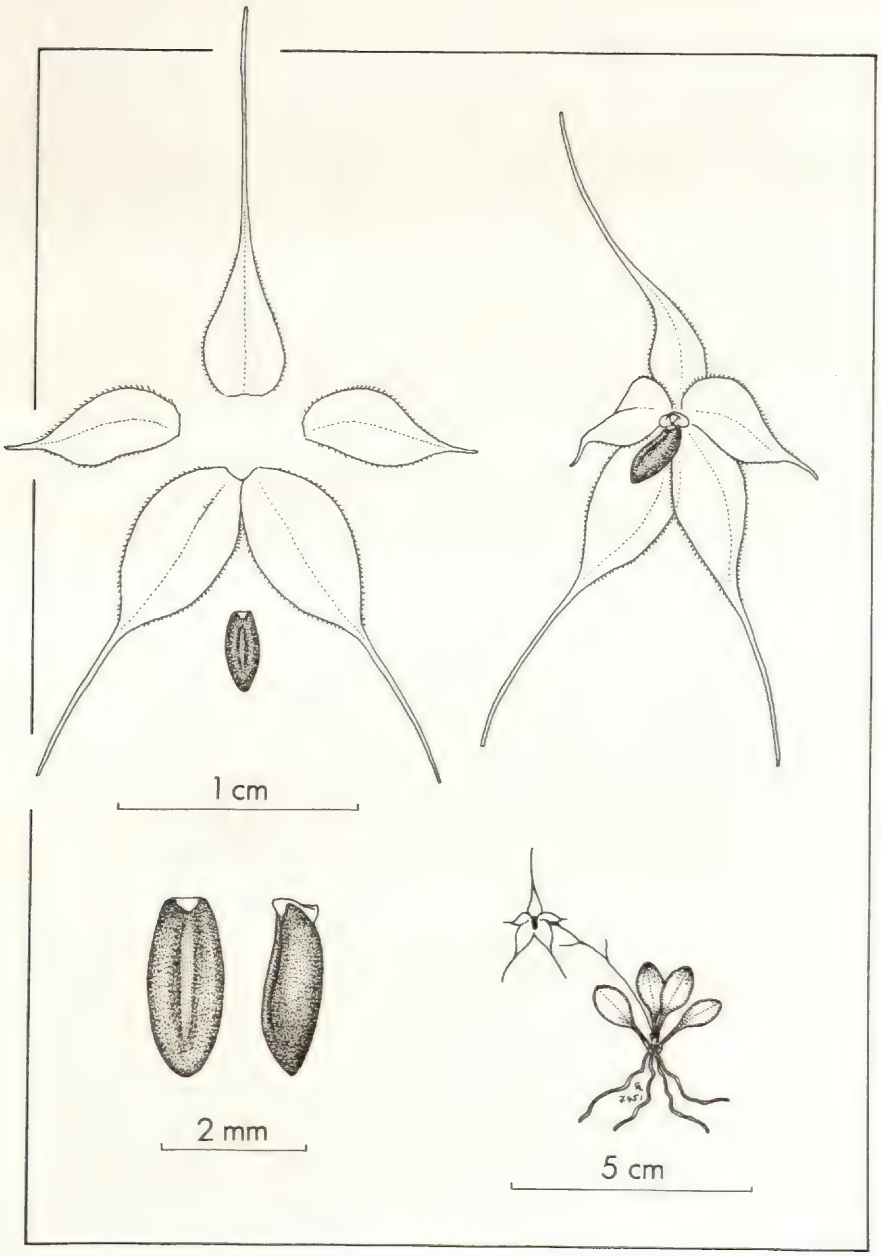

Plate 51. *Platystele posadarum* Luer & Escobar

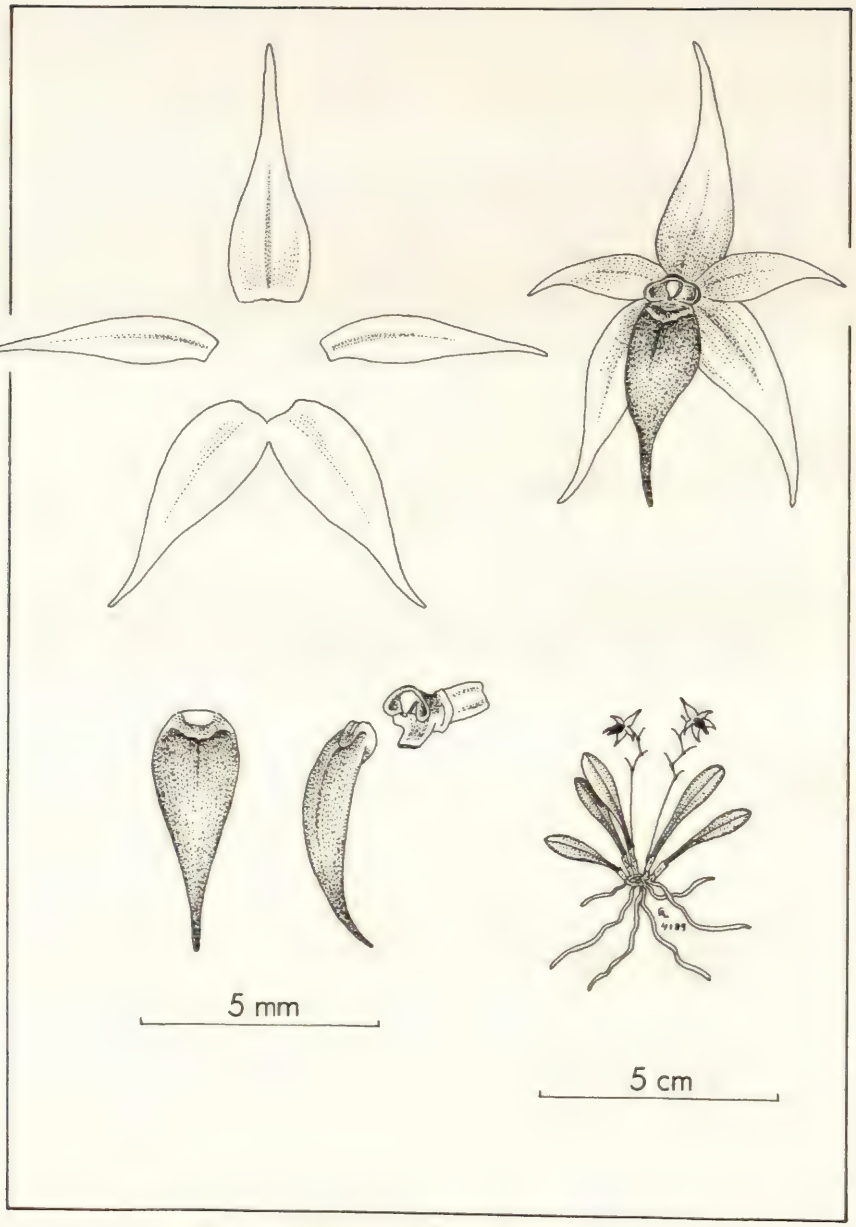

Plate 52. *Platystele propinqua* (Ames) Garay

Although *P. propinqua* is closely allied to *P. oxyglossa*, the former is readily distinguished by the larger, purple flowers with broader petals and a larger lip. The species is often floriferous at which time it is very showy with numerous, comparatively large, rose colored flowers surrounding a dense tuft of leaves. It is apparently endemic in central Costa Rica.

Platystele pubescens Luer, Phytologia 55: 200, 1984.

Ety.: From the Latin *pubescens*, "pubescent," referring to the integument of the sepals.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 2-4 mm long, enclosed by 2-3 thin, loose, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 13-25 mm long including a petiole 4-15 mm long, the blade elliptical, subacute, 4-7 mm wide, cuneate below into the petiole. **Inflorescence** a weak, suberect, loose, flexuous, distichous, successively several-flowered raceme up to 6 cm long including the filiform peduncle 1.5-2 cm long, emerging from the ramicaul; floral bracts thin, 1 mm long; pedicels 2.5-3 mm long; ovary 0.5 mm long; **sepals** translucent pale yellow with a red midvein, long-pubescent above the middle, ovate, acute, the dorsal sepal 2.3 mm long, 1.5 mm wide, the lateral sepals, oblique, acute, 2 mm long, 1.2 mm wide, connate ca. 1 mm; **petals** yellow with red midvein, obovate, oblique, acute, ciliate, 2.3 mm long, 0.7 mm wide; **lip** red, transversely ovate-cordate, obtuse, cellular-glandular, 0.8 mm long, 1 mm wide, the disc slightly channeled, the base subtruncate, fixed to the column-foot; **column** cucullate, 1 mm long and broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Pichincha: epiphytic in cloud forest near San Miguel de los Bancos, alt. 1300 m, July 1983, *A. Hirtz 1044* (Holotype: SEL), C. Luer illustr. 9163; above Mindo, alt. 2000 m, 6 Dec. 1984, *A. Hirtz 2152* (MO).

This species is apparently endemic in the forests of the western slopes of Mt. Pichincha where it has been found by Hirtz on several occasions. Vegetatively it is similar to many other little, caespitose species with more or less spathulate leaves. Diagnostic, however, are the long-pubescent sepals and the transversely cordate lip.

Platystele pyriformis Luer, sp. nov.

Ety.: From the Latin *pyriformis*, "pear-shaped," referring to the shape of the lip.

Planta mediocris caespitosa, inflorescentia racemosa laxiflora foliis obovatis duplolongiore, sepalis petalisque anguste ovatis acutis, labello carnoso pyriformi leviter sulcato apice rotundato.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 0.5-1 cm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 3-7 cm long including the petiole 1.5-3 mm long, the blade elliptical-obovate, obtuse, 1-1.2 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a strict, lax, successively several-flowered raceme, up to 13 cm long including the erect, slender peduncle 7-8 cm long, emerging laterally from the ramicaul; floral bracts oblique, 1 mm long; pedicels 3-5 mm long; ovary 1 mm long; **sepals** translucent rose, glabrous, narrowly ovate, acute, the dorsal sepal 4 mm long, 1 mm wide, 1-veined, the lateral sepals oblique, free to the base, 4 mm long, 1.4 mm wide; **petals** translucent rose, glabrous, narrowly ovate, acute, 3 mm long, 0.6 mm wide; **lip** red, thick, cellular-glandular, obovoid, with the apex rounded, 2 mm long, 1 mm wide, lightly sulcate centrally, the base subtruncate, with a small glenion, attached to the column-foot; **column** thinly cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Frontino, collected June 1976 by Jean Vigliotti, flowered in cultivation in Ft. Lauderdale, FL., 30 Aug. 1976, *C. Luer 676* (Holotype: SEL).

This species was discovered by Jean Vigliotti near Frontino in the Western Cordillera of Colombia and apparently it has not been collected again. Vegetatively it is considerably larger than its relatives. The lip is thick and pear-shaped. The undersurface of the lip is lightly concave between what look like thick, irevolute sides of the lip.

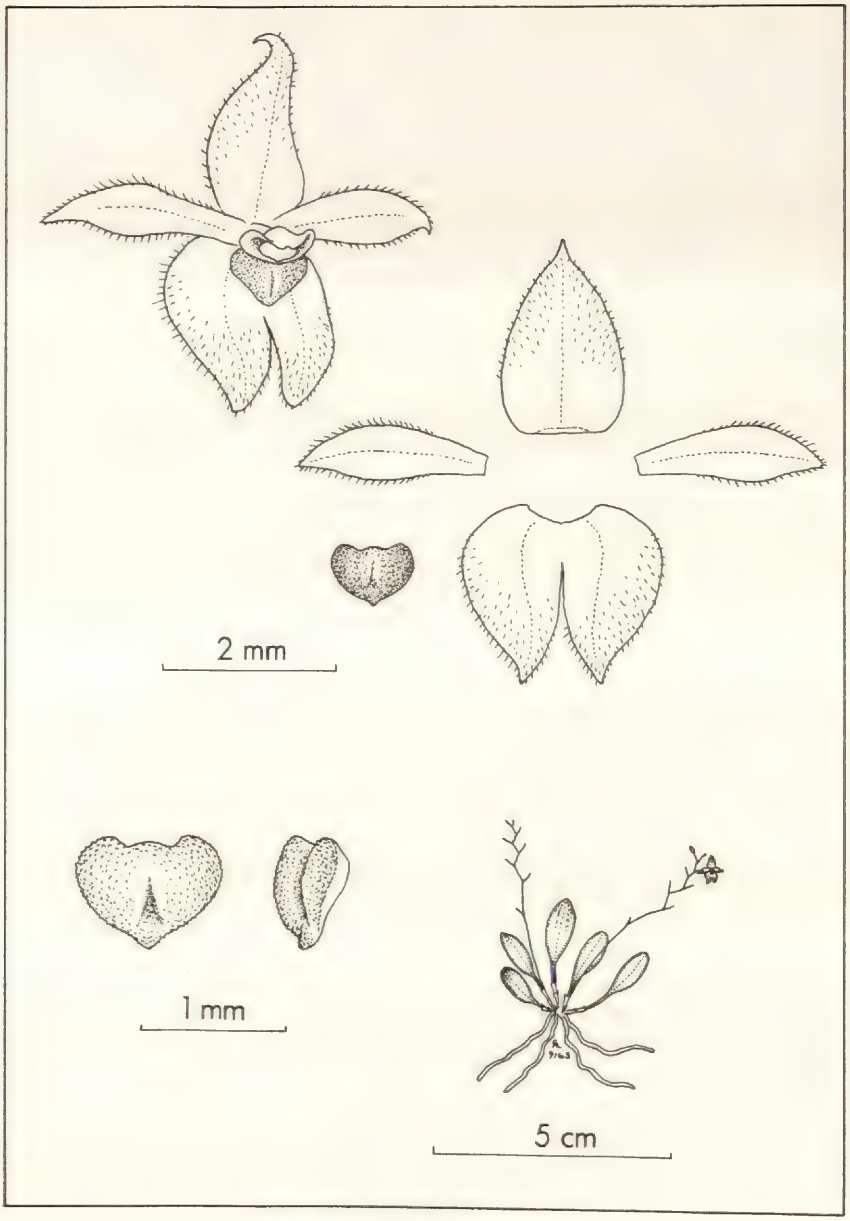

Plate 53. *Platystele pubescens* Luer

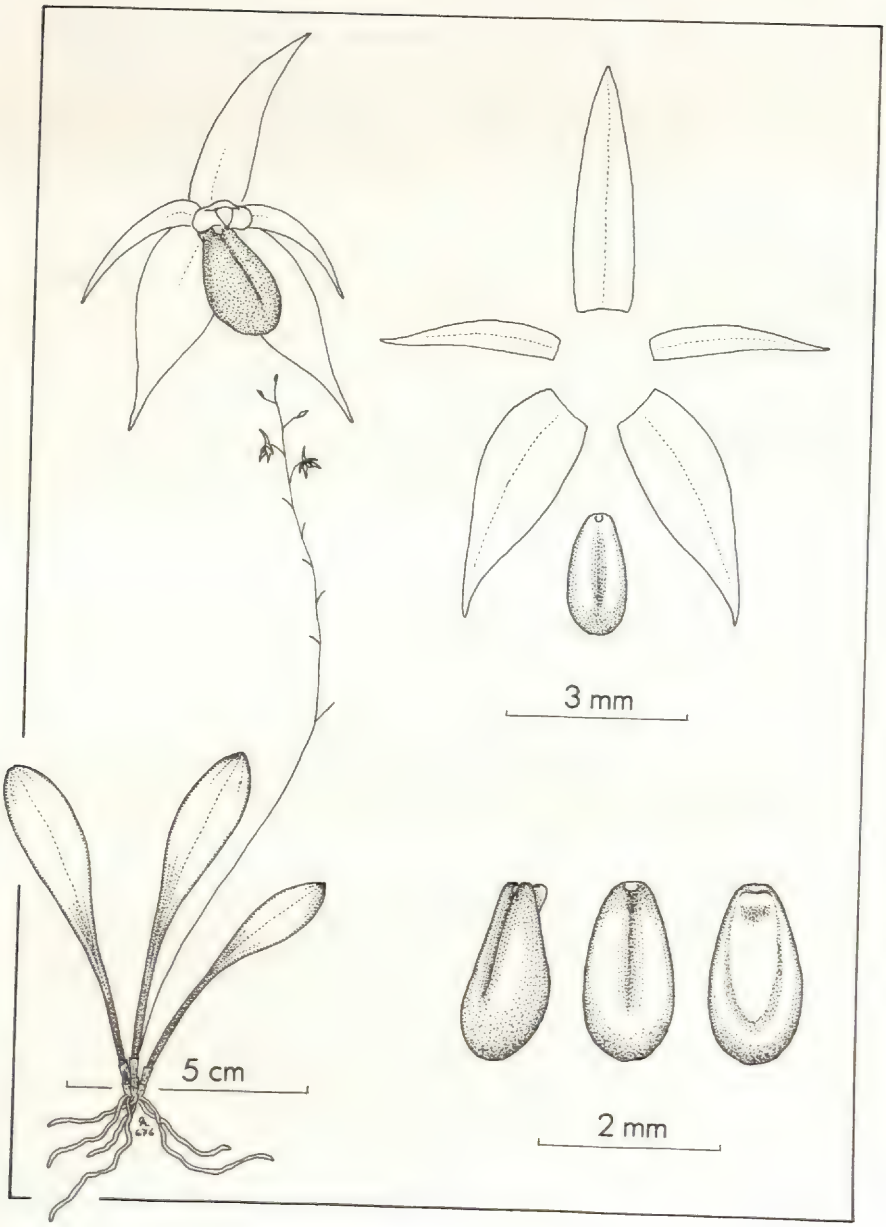

Plate 54. *Platystele pyriformis* Luer

Platystele rauhii Luer, Die Orchidee 38: 61, 1987.

Ety.: Named in honor of its discoverer, Dr. Werner Rauh of the University of Heidelberg.

Plant small, lithophytic, densely caespitose; roots coarse. Ramicauls erect, stout, 2-3 mm long, enclosed by 2-3 short, ribbed, imbricating sheaths. **Leaf** erect, thickly coriaceous, epetiolate, narrowly ovoid, semiterete to fusiform, acute, 10-22 mm long, 3-5 mm wide above the base, 2.5-4 mm thick. **Inflorescence** a loose, flexuous, subdistichous, successively many-flowered raceme, with 2-3 flowers often produced simultaneously, up to 10 cm long including the erect, slender peduncle 3 cm long, emerging laterally from the ramicaul; floral bracts oblique, 1-2 mm long; pedicels 2-4 mm long; ovary 0.8 mm long; **sepals** translucent yellow, glabrous, 1-veined, the dorsal sepal narrowly triangular-ovate, acute, 3 mm long, 1 mm wide, the lateral sepals oblique, elliptic-subfalcate, acute, acuminate, 3 mm long, 1 mm wide, free to the base; **petals** translucent yellow, glabrous, narrowly ovate, oblique, acute, acuminate, 2.75 mm long, 0.8 mm wide; **lip** red, cellular-glandular, narrowly ovoid, acute, acuminate above the middle, 2 mm long, 0.75 mm wide, lightly concave centrally, the base truncate, attached to the column-foot; **column** cucullate, 0.5 mm long, 0.5 mm broad, the stigma bilobed, the foot rudimentary.

PERU: Dept. of Libertad: lithophytic between Huamachuco and Trujillo, alt. ca. 2800 m, Aug. 1980, collected by W. Rauh 53754, flowered in cultivation at Heidelberg University 16 Oct. 1985, *C. Luer 11426* (Holotype: MO). Dept. of Cajamarca: south of Cajamarca along road to Cajabamba, lithophytic, alt. 2800 m, collected by K. von Bismarck, 16 Nov. 1986, *D. Bennett 3756* (MO); lithophytic above Celendín, alt. 2850 m, 18 Aug. 1987, *A. Sagástegui, J. Montacero & S. Leiva 12168* (MO).

This comparatively coarse but minute, succulent-leaved species is possibly the only one of the genus that grows lithophytically in full sun in the company of cactus. At this high altitude of little rain the days are hot, but the nights are cool and humid. The floral parts indicate a close relationship to *P. oxyglossa* and its relatives, but *P. rauhii* is distinguished by the broad, falcate petals that are similar to the lateral sepals.

Platystele reflexa Luer, Phytologia 49: 200, 1981.

Ety.: From the Latin *reflexus*, "reflexed," referring to the reflexed sepals and petals.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 5-40 mm long, partially enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 20-50 mm long including the petiole 5-15 mm long, the blade elliptical-obovate, subacute, 7-13 mm wide, the base cuneate into the petiole. **Inflorescence** racemose, a congested, distichous, successively several-flowered raceme up to 20 mm long, borne by a suberect, slender peduncle 3-5 mm long, from near the apex of the ramicaul; floral bracts thin, 1-3 mm long; pedicels 2 mm long; ovary 1 mm long, 3-angled; **sepals** orange, ovate, acute, 1-veined, glabrous, the dorsal sepal erect, concave, 2.25 mm long, 1.25 mm wide, the lateral sepals acutely reflexed, oblique, 2.25 mm long, 0.9 mm wide, connate near the base; **petals** acutely reflexed, orange, elliptical-ovate, acute, 1.75 mm long, 0.5 mm wide; **lip** orange, thick, cellular-glandular, elliptical, 1.75 mm long, 0.9 mm wide, the apex rounded, the base subtruncate, with a small glenion; **column** cucullate, 0.75 mm long and broad, the stigma bilobed, hooded, the foot rudimentary long.

ECUADOR: Prov. of Morona-Santiago: Río Calagrás, alt. 1600 m, 19 Sept. 1980, *C. Luer, J. Luer, A. Andreetta et al. 5601* (Holotype: SEL). Prov. of Pichincha: old road between Quito and Santo Domingo, collected by Cordelia Head, flowered in cultivation at J & L Orchids, Easton, CT., 5 May 1990, *C. Luer 14755* (MO).

This species is closely allied to the widely distributed *P. stenostachya*, and it occurs within the distribution of the latter in Ecuador. Vegetatively *P. reflexa* is usually distinguished by broader leaves, but most distinct are the twice larger flowers with acutely reflexed lateral sepals and petals.

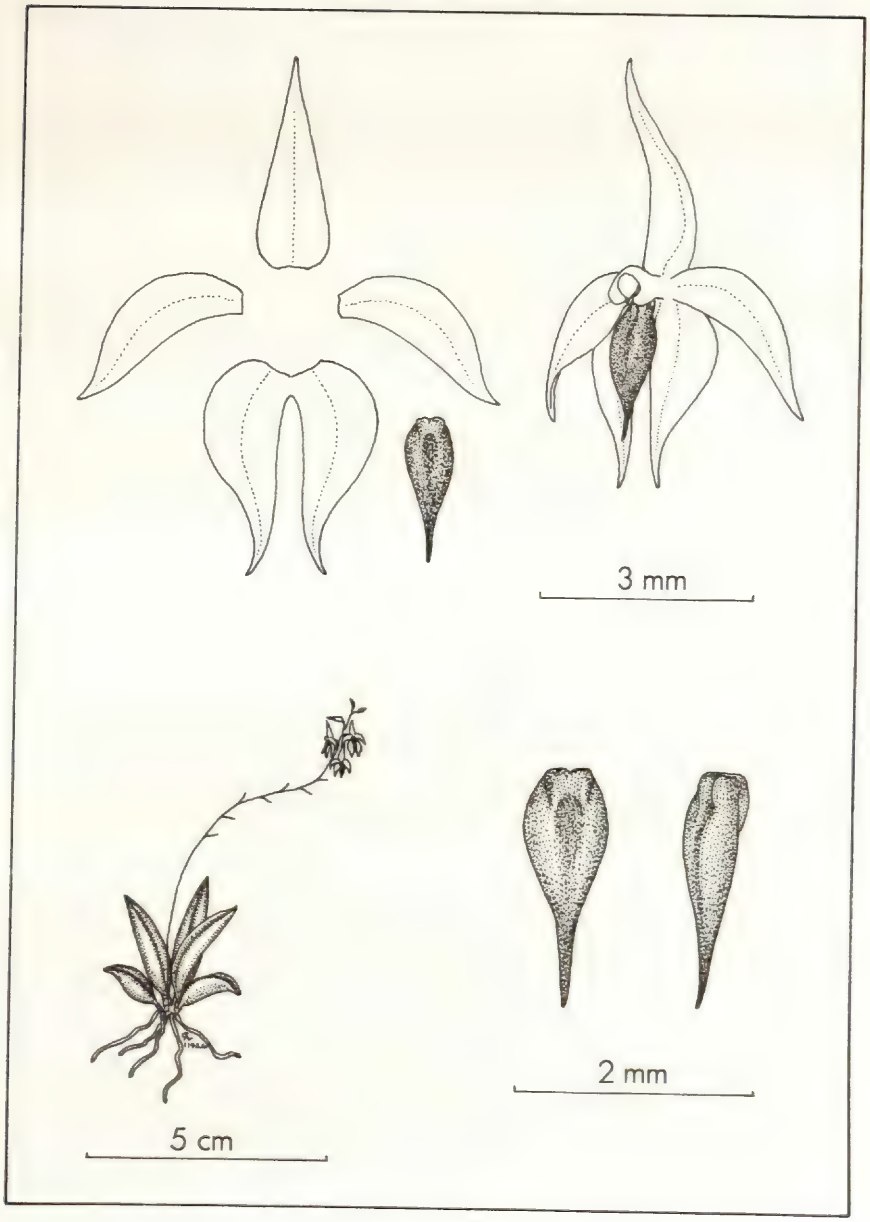

Plate 55. *Platystele rauhii* Luer

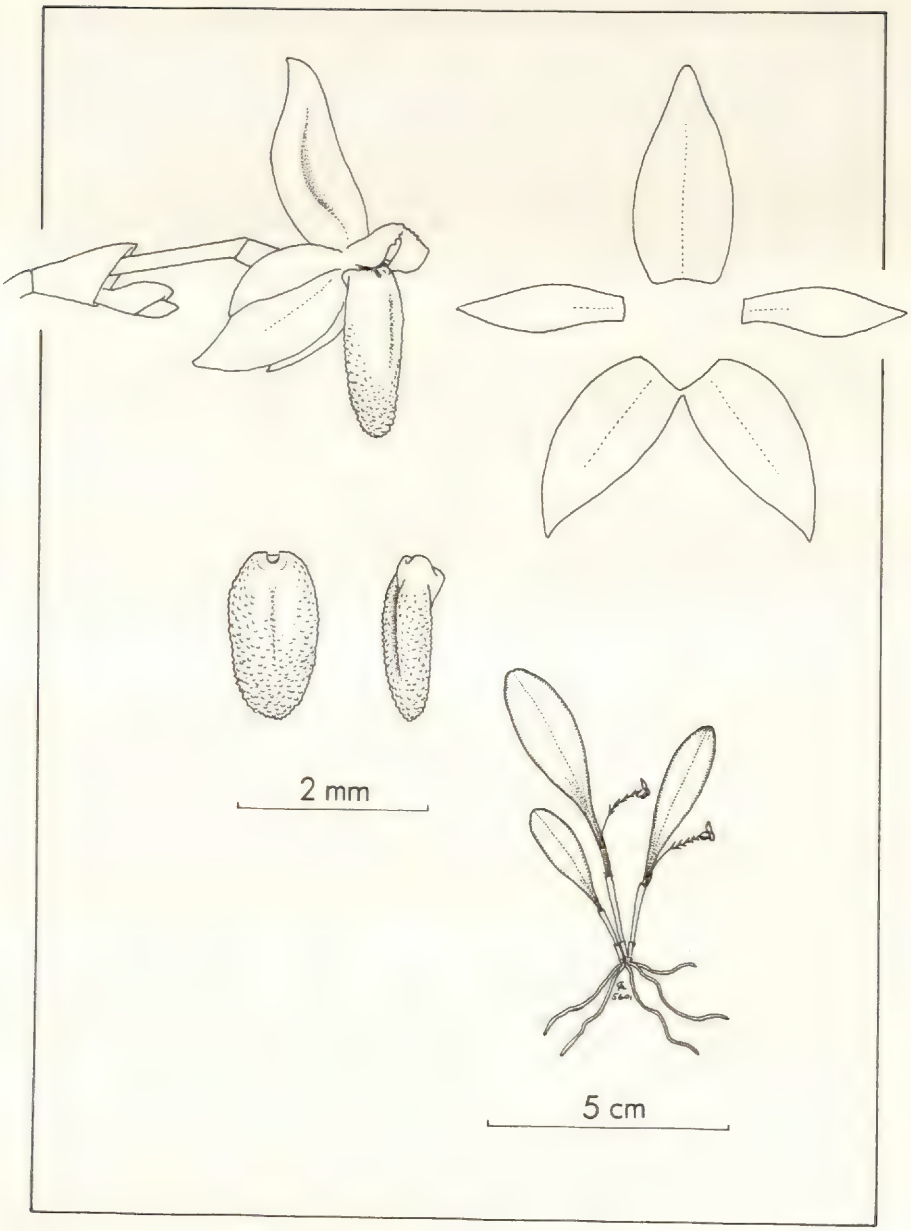

Plate 56. *Platystele reflexa* Luer

Platystele repens (Ames) Garay,

Bas.: *Pleurothallis repens* Ames, Orchidaceae 2: 271, 1908.
Ety.: From the Latin *repens*, "creeping," referring to the habit of the plant.

Syn.: *Pleurothallis hians* Ames ex Smith, Enum. Pl. Guatem., pt. 8, index, 1907, not Lindley.
Ety.: From the Latin *hians*, "gaping," referring to the widely spread flowers.

Plant medium in size, epiphytic, repent; roots slender, along the rhizome, the rhizome slender, 2-5 mm long between ramicauls. Ramicauls suberect, ascending, slender, 5-7 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, 3-4.5 cm long including an indistinct petiole ca. 1 cm long, the blade narrowly elliptical-obovate, subacute to obtuse, 3-5 mm wide, gradually narrowed below into the petiole. **Inflorescence** an erect, subdense, successively few-flowered raceme up to 5 mm long borne by a peduncle 10-15 mm long, emerging laterally from the ramicaul; floral bracts thin, 1 mm long; pedicels 1.5-2 mm long; ovary 1 mm long; **sepals** translucent pale yellow, glabrous, the dorsal sepal elliptical obtuse, 3.2 mm long, 2 mm wide, 1-veined, the lateral sepals ovate, oblique, obtuse, 3 mm long, 1.8 mm wide, 1-veined, free to the base; **petals** elliptical, acute, glabrous, 3 mm long, 1.4 mm wide, 1-veined; **lip** yellow, cellular, ovate, subacute, 2.8 mm long, 1.4 mm wide, the base truncate with a shallow glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

GUATEMALA: Dept. of Alta Verapaz: Cubilquitz, alt. 350 m, Dec. 1901, *H. von Türckheim 496* (Holotype: AMES); Cubilquitz, Finca Samangana, collected by H. A. Paredes C., Sept. 1990, alt. 300 m, *C. Luer 14863* (AMES, K, MO).

This species is apparently endemic in the lowlands of eastern Guatemala and Belize. It is readily identified by the repent habit; narrow, erect leaves up to 4 centimeters long; and a shorter, successively few-flowered inflorescence. The yellow flower is relatively large with obtuse, glabrous sepals, and an ovate, suberect lip.

Platystele resimula Luer & Hirtz, sp. nov.

Ety.: From the Latin diminutive of *resimus*, "with up-turned nose," referring to the appearance of the lip.

Planta parva caespitosa, inflorescentia racemosa foliis anguste ellipticis longiore, sepalis anguste ovatis longi-attenuatis, petalis subulatis minute ciliatis, labello crasso carnoso obovoideo obtuso apice abrupte subacuto incurvo.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 3-15 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 10-45 mm long including a petiole 3-25 mm long, the blade narrowly elliptical-obovate, subacute, 3-6 mm wide, narrowly cuneate below into the petiole. **Inflorescence** a weak, erect, distichous, distantly and successively several-flowered raceme up to 8 cm long including the filiform peduncle 1-2 cm long, emerging laterally from the ramicaul; floral bracts thin, 0.5-0.75 mm long; pedicels 2-3 mm long; ovary 0.3-0.5 mm long; **sepals** translucent light purple or rose, tan, or yellow, with microscopic, white cilia, narrowly ovate, acute, long-attenuate, the dorsal sepal 3-4 mm long, 0.75-1 mm wide, the lateral sepals oblique, 2.5-3.5 mm long, 1 mm wide, free to the base; **petals** similarly colored, ciliate, very narrowly linear-ovate, acute, long-attenuate, 2-3 mm long, 0.3 mm wide; **lip** red, red-brown, or orange, thick, cellular-glandular, obovoid-uncinate, 1.5 mm long, 1 mm wide, the disc shallowly concave, with a minute, basal glenion, the apex abruptly subacute, incurved, the base subtruncate, fixed with a short claw to the column-foot; **column** cucullate, 0.3 mm long, 0.5 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Pichincha: epiphytic in cloud forest south of Tandapi alt. 1600 m, 1 Mar. 1986, *C. Luer, C. Dodson, A. Hirtz & A. Embree 12062* (Holotype: MO); between Mindo and San Miguel de los Bancos, alt. 1450 m, 1 Apr. 1984, *C. Luer, S. Dalström, T. Höijer & A. Hirtz 9866* (MO); Tandapi south to Río Sarapullo, alt. 1500 m, Aug. 1989, *A. Hirtz & X. Hirtz 4291* (MO).
PANAMA: Prov. of Chiriquí: epiphytic in forest near the Fortuna Dam, alt. 1100 m, 16 Feb. 1985, *C. Luer, J. Luer, R. L. Dressler & K. Dressler 10566* (MO); continental divide, March 1985, *A. Maduro 16-M* (MO). Prov. of Coclé: El Valle, alt. ca. 1000 m, collected by G. Kennedy, flowered in cultivation at SEL, 6 Mar. 1976, *C. Luer 761* (SEL). Prov. of Panama: Cerro Jefe, alt. ca. 1000 m, Sept. 1976, *C. Luer & H. Butcher 1618* (SEL).

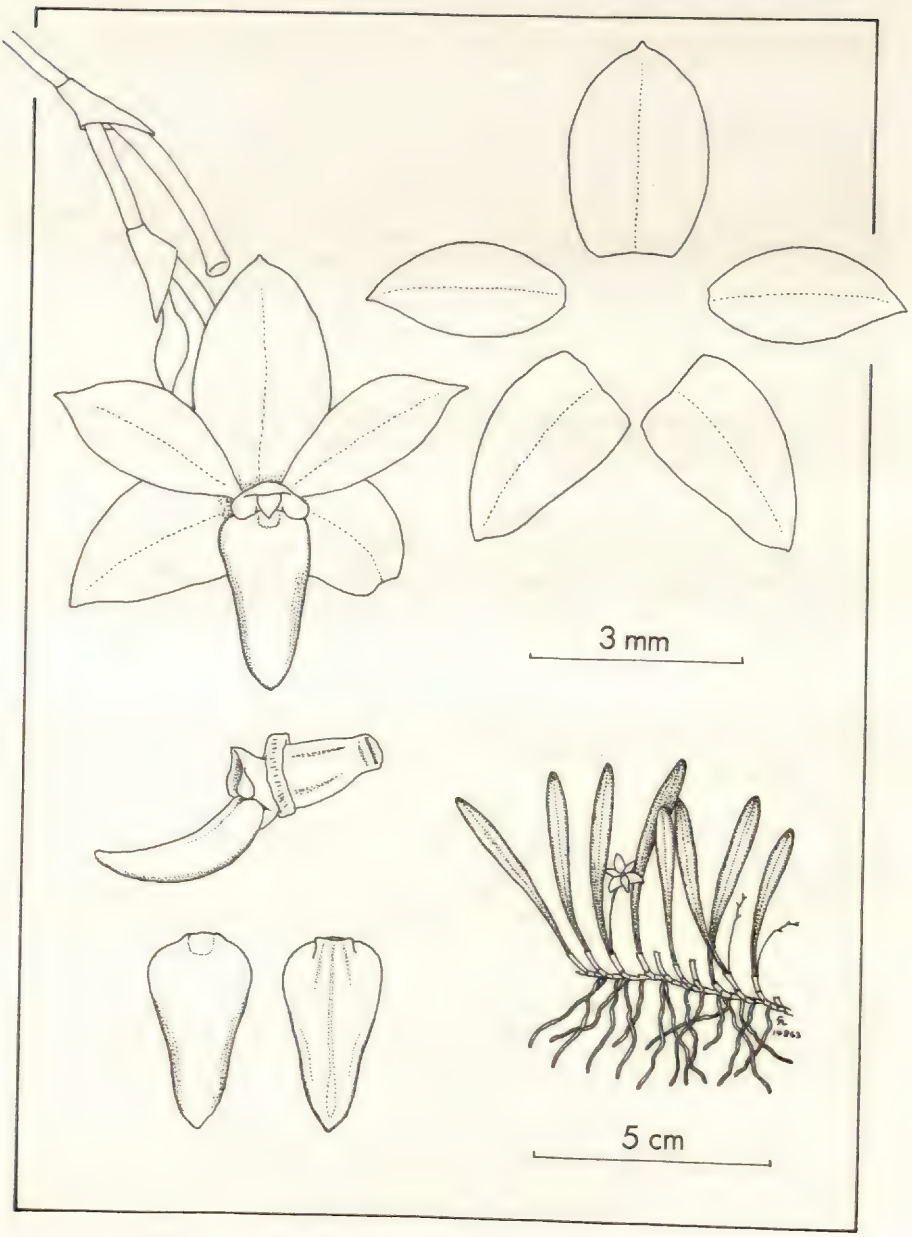

Plate 57. *Platystele repens* Ames

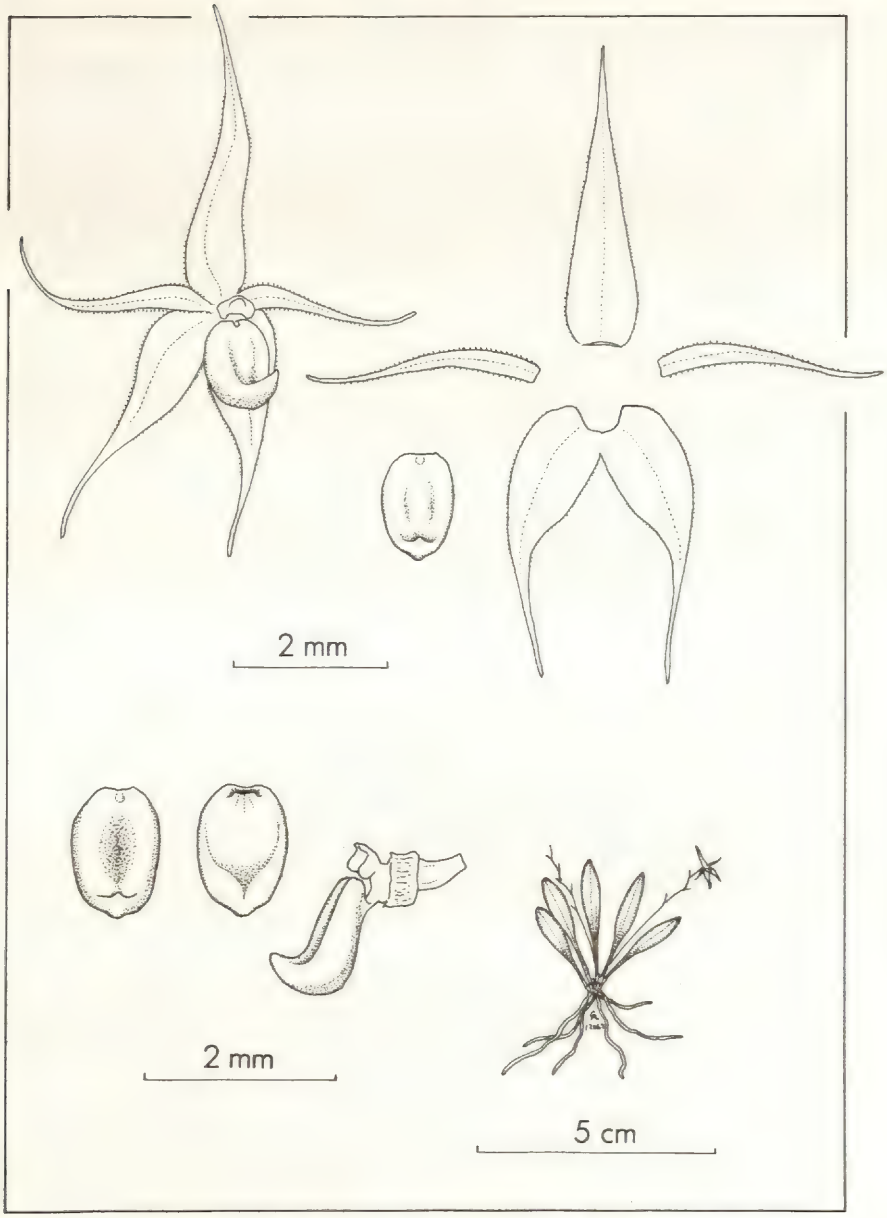

Plate 58. *Platystele resimula* Luer & Hirtz

This species with a thick, obovoid lip with an up-turned apex, is distinguished from *P. rhinocera* with a similar lip by the larger flowers with long-attenuate sepals. The former occurs uncommonly at moderately low altitudes of the western slopes of central Ecuador, and it is also uncommon in Panama. The cilia of the sepals and petals of the plants from Panama are microscopic.

Platystele rex Luer & Escobar, Orquideología 15: 140, 1982.

Ety.: From the Latin *rex*, "a king," in allusion to the regal appearance of the species among a genus of small flowers.

Plant large for the genus, epiphytic, shortly repent, the rhizome ca. 1 cm long between ramicauls; roots coarse. Ramicauls ascending, slender, 2.5-3 cm long, enclosed by 2-3 imbricating sheaths. **Leaf** erect, thinly coriaceous, petiolate, 9-13 cm long including a petiole 3-3.5 cm long, the blade elliptical, acute, lightly acuminate, 16-22 mm wide, the base acuminate into the petiole. **Inflorescence** an erect, subdense, distichous, simultaneously several-flowered raceme, up to 11 cm long including the slender peduncle 4-5 cm long, from near the middle of the ramicaul; floral bracts thin, 2 mm long; pedicels 1-1.5 mm long; ovary 1.5 mm long; **sepals** bright rose, minutely short-pubescent, the dorsal sepal ovate at the base, 20 mm long, 3 mm wide, 3-veined, the apex acute, long-acuminate into a filiform tail, the lateral sepals narrowly ovate, oblique, 20 mm long, 3 mm wide, 2-veined, connate 3 mm, the apices acute, acuminate into filiform tails; **petals** bright rose, minutely pubescent, ovate, acute, 3 mm long, 1 mm wide; **lip** rose, suborbicular, 3.5 mm long, 3 mm wide, the apex rounded and concave with involute margins toward the center of the disc, the disc with a rounded, cleft, cellular-pubescent callus at the base, the basal lobes obtuse, incurved, embracing the column, the base fixed to the column-foot; **column** cucullate, 1 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Intend. of Putumayo: epiphytic in cloud forest east of San Francisco toward Mocoa, alt. 2200 m, 2 Aug. 1978, *C. Luer, J. Luer, J. Kuhn & D. Welisch 3133* (Holotype: SEL; Isotype: JAUM).

This species is one of the showiest of the genus. It is characterized by the robust, repent habit; the large, thin, petiolate leaves tapered at either end; and a congested, distichous raceme of simultaneous, large, bright rose flowers suggesting a giant *Lepanthopsis*. The sepals are long-attenuate, and the round lip, deeply excavate at the apex, embraces the column with basal lobes.

Platystele rhinocera Luer & Hirtz, sp. nov.

Ety.: From the Greek *rhinoceras*, "a hornlike nose," referring to the appearance of the lip.

Planta parva caespitosa, inflorescentia racemosa foliis late ellipticis obtusis longiore, sepalis ovatis glabris, petalis subulatis, labello crasso carnoso obovoideo obtuso apice abrupte incurvo.

Plant very small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 2-5 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 6-22 mm long including a petiole 2-10 mm long, the blade broadly elliptical, obtuse, 4-8 mm wide, cuneate below into the petiole. **Inflorescence** an erect, loose, distichous, subflexuous, successively few- to several-flowered raceme to 5 cm long, borne by a filiform peduncle 1-3 cm long, from low on the ramicaul; floral bracts oblique, 0.75-1.5 mm long; pedicels 1-4 mm long; ovary 0.5 mm long; **sepals** translucent yellow to light purple, glabrous, the dorsal sepal ovate, concave, obtuse, 2.25 mm long, 1.5 mm wide, 1-veined, the lateral sepals ovate, oblique, subacute, 2 mm long, 1 mm wide, 1-veined, free to the base; **petals** yellow to light purple, narrowly triangular, oblique, acute, 2 mm long, 0.2-0.5 mm wide, the margins cellular; **lip** dark purple, thick, fleshy, cellular-glandular, obovoid, with the obtuse apex abruptly acute and incurved, 1.5-1.75 mm long, 1-1.25 mm wide, 0.75 mm thick, the base truncate with a small glenion, fixed to the column-foot; **column** shallowly cucullate, 0.5 mm long and broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Nariño: epiphytic in forest above Ricaurte, alt. 1800 m, flowered in cultivation at the La Planada Orquideario, 25 Jan. 1987, *C. Luer 12493* (Holotype: MO).
ECUADOR: Prov. of Esmeraldas: epiphytic in wet forest west of Lita, alt. 750 m, 18 Jan. 1987, *C. Luer, J. Luer, A. Hirtz, C. H. Dodson, D. Benzing & D. Bermudes 12385* (MO).

Platystele rhinocera, the sympatric *P. fimbriata* and *P. resimula* have very similar, thick, obovoid lips with upturned tips, but the sepals and petals differ markedly. Those of *P. fimbriata* are fimbriate; those of *P. resimula* are long-

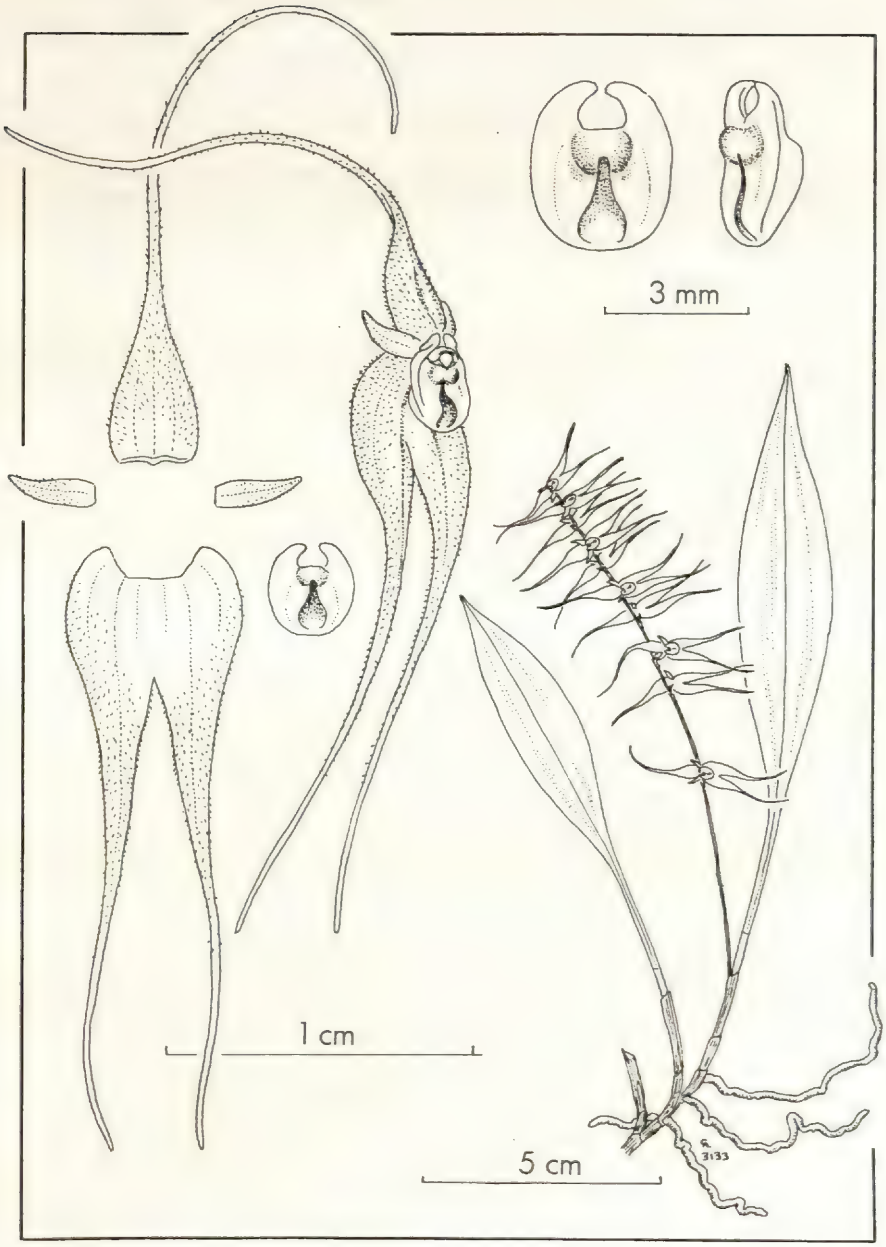

Plate 59. *Platystele rex* Luer & Escobar

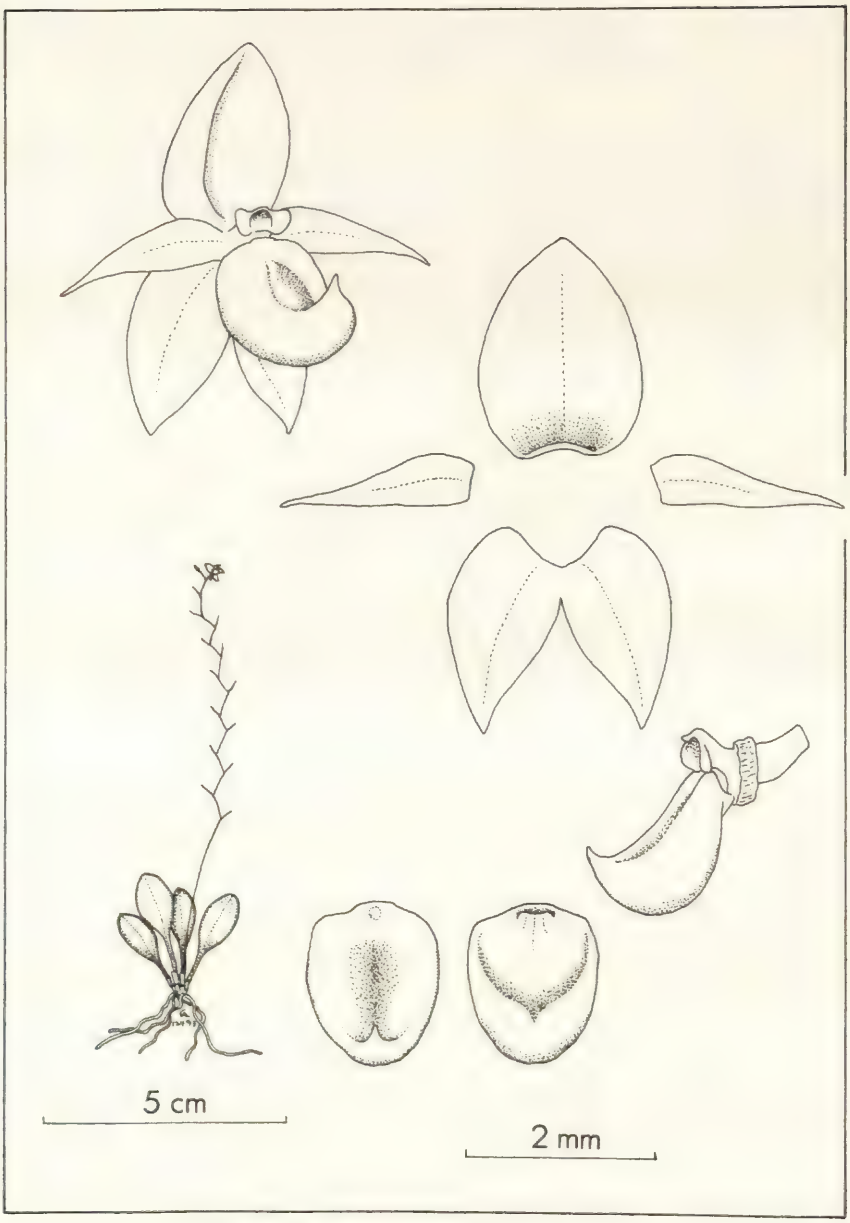

Plate 60. *Platystele rhinocera* Luer

attenuate. *Platystele rhinocera* is distinguished by the ovate, obtuse, entire, glabrous sepals and subulate petals. The lip is obovoid and thick at the obtuse apex where the tip is abruptly acute and erect. This species is uncommon in southwesternmost Colombia, and northwestern Ecuador. Vegetatively the plants from Ecuador are smaller with shorter inflorescences than those seen from Colombia.

Platystele schmidtchenii Schltr., Repert. Spec. Nov. Regni Veg. Beih. 27: 166, 1924.

Ety.: Named in honor of its discoverer, G. Schmidtchen, traveller from Dresden, Germany, who collected in Colombia in 1880.

Syn.: *Platystele escobariana* Garay, Orquideología 6: 15, 1971.
Ety.: Named in honor of Sr. Gilberto Escobar of Medellín, Colombia.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-1.5 cm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 2.5-6 cm long including the petiole 1-2.5 cm long, the blade elliptical-obovate, subacute, 0.5-0.9 cm wide, the base narrowly cuneate into the petiole. **Inflorescence** a strict, subdense, distichous, simultaneously many-flowered raceme, 8-15 cm long including the erect, slender peduncle 3-5 cm long, emerging laterally from the ramicaul; floral bracts loose, oblique, 1.5-2 mm long; pedicels 0.75-3.5 mm long; ovary winged, more or less papillose, 0.25 mm long; **sepals** translucent light yellow-green, glabrous, ovate, acute, acuminate, the dorsal sepal 2-4 mm long, 0.4-0.9 mm wide, 1-veined, the lateral sepals oblique, more or less parallel, connate ca. 0.5 mm, 2-4 mm long, 0.6-0.75 mm wide; **petals** translucent light yellow-green, glabrous, narrowly ovate, acute, long-acuminate, 2-3.25 mm long, 0.4-0.5 mm wide; **lip** yellow or rose, cellular-glandular, ovate, subacute to obtuse, 0.9 mm long, 0.6 mm wide, concave on the truncate, basal end below a low, transverse, basal callus, attached to the column-foot; **column** thinly cucullate, 0.5 mm long, 0.5 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Tolima: without locality, *G. Schmidtchen, s.n.* (?destroyed at B); Dept. of Antioquia: Frontino, collected by Janet Kuhn, flowered in cultivation by P. & A. Jesup in Bristol, CT., 26 Apr. 1987, *C. Luer 12842* (MO). Dept. of Caldas: Alto de Roble above Anserma, alt. 1800 m, 2 Nov. 1883, *F. C. Lehmann 3285* (G); Anserma, alt. 2000 m, *G. Escobar 155* (type of *P. escobariana*: AMES); without locality, flowered in cultivation by M. & O. Robledo at La Ceja, 15 Oct. 1977, *C. Luer 2043* (SEL).
ECUADOR: Prov. of Morona-Santiago: Valle de los ríos Negro y Chupianza, trail from Sevilla de Oro to Mendez, between Hda. Chontal and Sta. Elena, alt. 3400-4600 ft., 1 Nov. 1944, *W. H. Camp E-813* (AMES, NY). Prov. of Pastaza: Mera, 20 Apr. 1972, *H. Lugo S. 1943* (AMES); near Puyo, flowered in cultivation by Joe Brenner, July 1975, *C. Luer 470* (SEL). Prov. of Tungurahua: Volcán Tungurahua, May 1984, *A. Hirtz 1802* (MO), C. Luer illustr. 12744.
BOLIVIA: Dept. of Cochabamba: Chapare, Abra del Sillar between Cochabamba and Villa Tunari, alt. 1700 m, Aug. 1979, *R. Vásquez 175* (SEL).

This species was first described by Schlechter from a collection by G. Schmidtchen from the Central Cordillera of Colombia. It is fairly frequent and it occurs over a wide distribution in both the western and central cordilleras and the eastern declivities of the Andes in Ecuador and Bolivia.

Platystele schmidtchenii is variable in size: a larger-flowered form with the sepals 4 mm long was described as *P. schmidtchenii*, and a smaller-flowered form with the sepals 2 mm long was described later as *P. escobariana*. The lips of both forms are of the same size. The sepals of both forms are acuminate, the laterals more or less approximate and connate basally. An even greater variation in size is permitted in several other species of *Platystele*, e.g. *P. examen-culicum*, *P. oxyglossa* and *P. pedicellaris*.

Platystele schneideri P. Ortiz, Orquideología 14: 24, 1979.

Ety.: Named in honor of Martin Schneider, student of Colombian orchids.

Plant very small, epiphytic, densely caespitose; roots comparatively thick. Ramicauls erect, slender, 4-6 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 10-20 mm long including the petiole 3-5 mm long, the blade narrowly elliptical-obovate, subacute, 4-6 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** a subdense, flexuous, distichous, successively many-flowered raceme up to 6 cm long, 2-3 flowers open simultaneously, borne by a weak, slender peduncle 10-15 mm long; floral bracts thin, 0.5 mm long; pedicels 1.5-2 mm long; ovary 0.5 mm long, subcostate; **sepals** translucent greenish white,

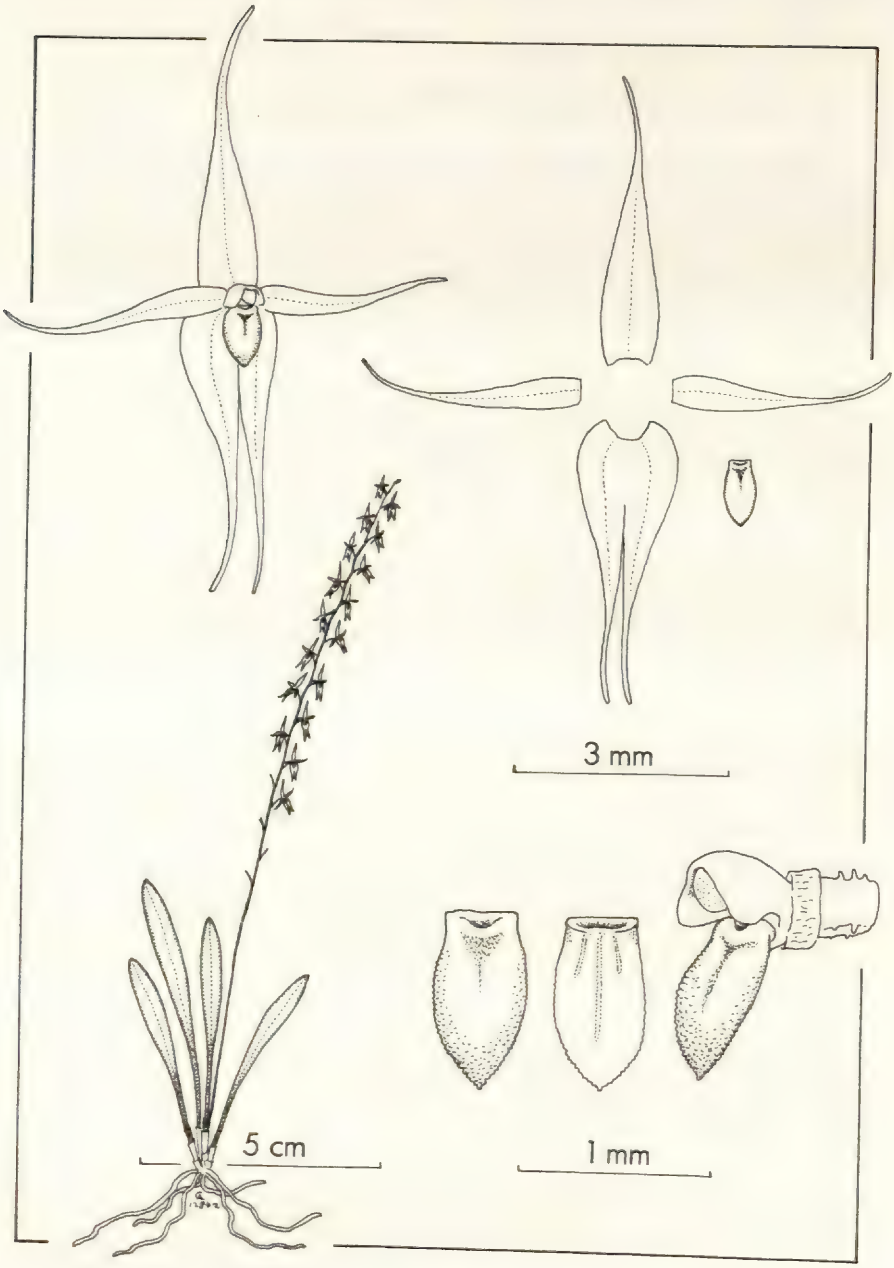

Plate 61. *Platystele schmidtchenii* Schltr.

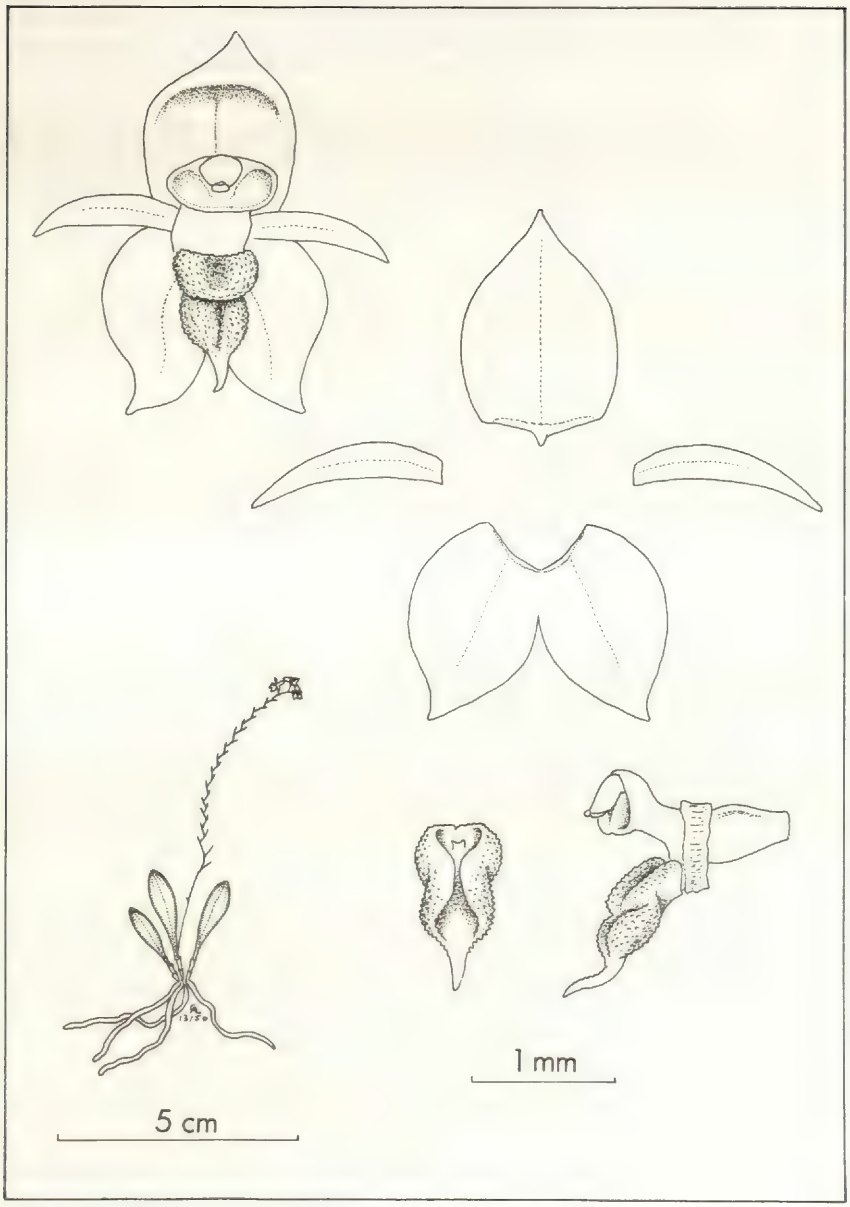

Plate 62. *Platystele schneideri* P. Ortiz

broadly ovate, obtuse, lightly acuminate, the dorsal sepal 1.5 mm long, 1.1 mm wide, 1-veined, the lateral sepals oblique, 1.2 mm long, 0.9 mm wide, free to near the base; **petals** translucent greenish white, linear-oblong, arcuate, acute, 1.3 mm long, 0.25 mm wide; **lip** greenish white, cellular pubescent, subpandurate, 1.2 mm long, 0.5 mm wide, the apex acuminate, acute, the basal half occupied by a thick, ovoid callus 0.6 mm long, broader than the blade; **column** cucullate at the apex, with the gynostemium elongated, 0.6 mm long, the stigma bilobed, the foot 0.2 mm long.

COLOMBIA: Dept. of Cundinamarca: Santandercito, alt. ca. 2400 m, 24 Feb. 1968, *P. Ortiz 48* (Holotype: COL); same area, 16 June 1949, *M. Schneider 392* (COL); La Rambla near Santander, 16 June 1949, *M. Schneider 495* (S); above Sibaté near Soacha, alt., 3000 m, 3 Feb. 1883, *F. C. Lehmann 2879* (G). Dept. of Antioquia: Cerro Bravo, Hda. La Candelaria, near Fredonia, 28 Aug. 1976, *R. L. Dressler 5428* (MO); Munic. of Urrao, Quebradona, flowered in cultivation at Colomborquídeas, 10 Apr. 1988, *C. Luer 13150* (MO). Dept. of Boyacá: between Arcabuco and Moniquirá, alt. 2450 m, 19 July 1969, *P. Ortiz 4053* (Herb. P. Ortiz). Dept. of Cauca: moist forest above Arrayanal, alt. 1800 m, 20 Oct. 1883, *F. C. Lehmann 3361* (G); San Antonio, San José, alt. 2400-2700 m, 28 June 1922, *F. W. Pennell & E. P. Killip 7320* (AMES); El Tambo, June 1971, *P. Ortiz 4130* (Herb. P. Ortiz).

This very small-flowered species is widely distributed in all three cordilleras of Colombia. It was first collected by Consul Lehmann in 1883, but his collections lay unidentified in European herbaria. It was recently recognized by Padre Ortiz from a recent collection by Martin Schneider. *Platystele schneideri* is closely allied to *P. microtatantha* of Costa Rica, but *P. schneideri* is distinguished by a longer, looser inflorescence, and a lip with a basal callus as broad as or broader than the blade of the lip.

Platystele spatulata Luer, Phytologia 46: 356, 1980.

Ety.: From the Latin *spatulatus*, "shaped like a spoon, spatulate, or spathulate," referring to the shape of the leaves.

Plant small, epiphytic, densely caespitose; roots coarse. Ramicauls erect, slender, 0.5-1 cm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate-spatulate, 2-4 cm long including a petiole 1-2 cm long, the blade elliptical, obtuse to rounded, 0.8-1.4 cm wide, cuneate below into the petiole. **Inflorescence** a weak, suberect, loose, flexuous, distichous, successively many-flowered raceme up to 18 cm long including the filiform peduncle 3-4 cm long, up to 5 flowers produced simultaneously, emerging laterally from the ramicaul; floral bracts thin, 1-1.5 mm long; pedicels 4-7 mm long; ovary 0.5 mm long, tricostate; **sepals** and petals reflexed, translucent pale yellow-green, glabrous, the dorsal sepal broadly ovate, concave, obtuse, 2 mm long, 1.5 mm wide, the lateral sepals ovate, oblique, acute, 2 mm long, 1 mm wide, free to the base; **petals** narrowly ovate, oblique, acute, 2 mm long, 0.5 mm wide; **lip** red-purple, protruding, suborbicular, thick, cellular-glandular, with an obtuse, erect apex, 1.5 mm long, 1.25 mm wide, the disc slightly concave centrally, the base subtruncate, fixed to the column-foot; **column** cucullate, 0.5 mm long and broad, the stigma red, bilobed, the foot rudimentary.

ECUADOR: Prov. of Pichincha: epiphytic in cloud forest above Mindo, alt. 2200 m, 11 Nov. 1979, *C. Luer, J. Luer & A. Hirtz 4751* (Holotype: SEL).

This species is apparently endemic in the forests of the western slopes of Mt. Pichincha where it has been found on only one occasion. Vegetatively it is distinct with the paddle-shaped leaves. The sepals and petals of the tiny flowers are reflexed, the backs of the lateral sepals touching. The proportionately large, thick, rounded lip studded with large cells protrudes rigidly from the center of the flower. The sides of the lip seem to be revolute to create the unusual thickness.

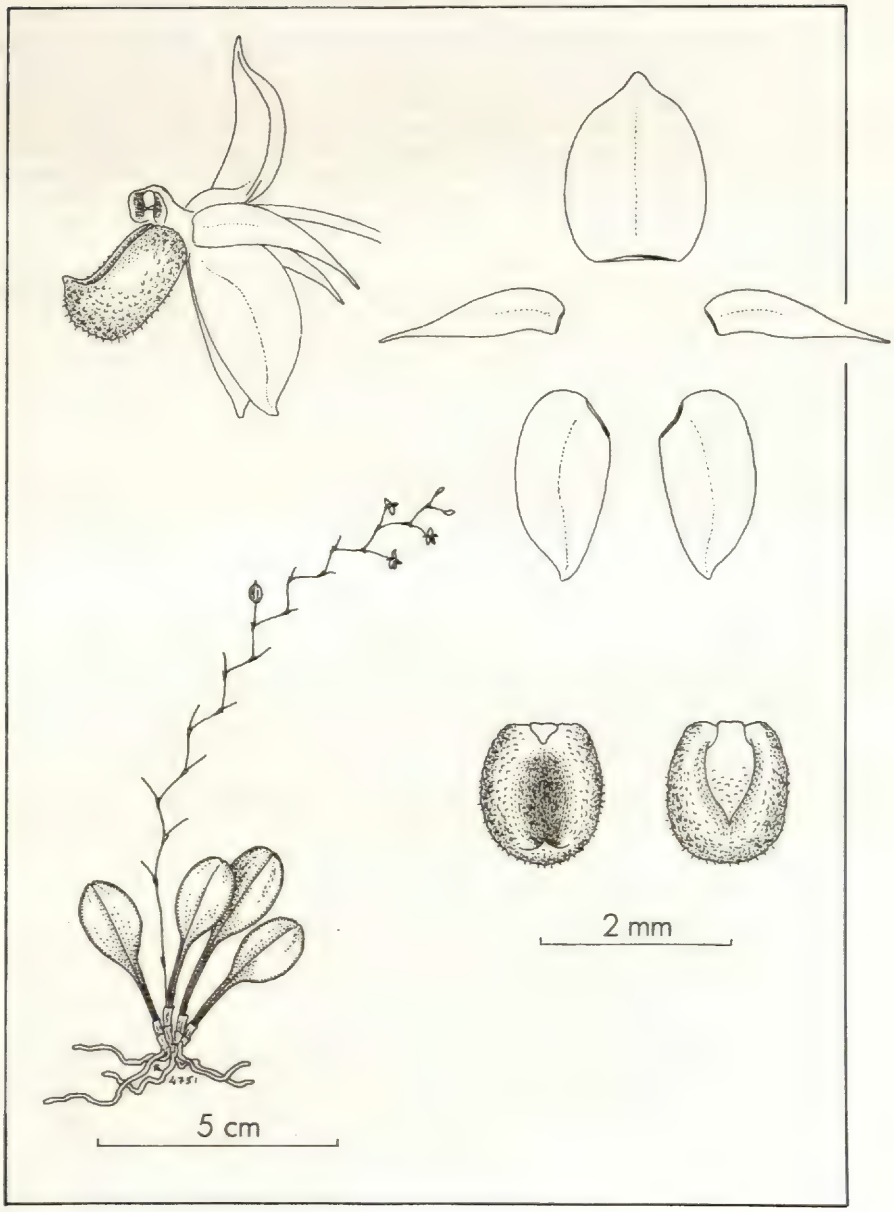

Plate 63. *Platystele spatulata* Luer

Platystele stellaris Luer, Selbyana 5: 156, 1979.

Ety.: From the Latin *stellaris*, "like a star," in allusion to the shape of the flower.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 0.5-1.5 cm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 2-3 cm long including a petiole 1-1.5 cm long, the blade narrowly elliptical-obovate, subacute, 0.6-0.8 mm wide, narrowly cuneate below into the petiole. **Inflorescence** a weak, suberect, distantly and successively few-flowered raceme up to 15 cm long including the filiform peduncle 4-5 cm long, emerging laterally from the ramicaul; floral bracts thin, 1.5 mm long; pedicels 5-7 mm long; ovary 0.5 mm long; **sepals** and petals similar, translucent pale tan with the midvein red-brown, glabrous (microscopically cellular-ciliate), ovate, acute, long-acuminate, the dorsal sepal 15 mm long, 3.5 mm wide, the lateral sepals oblique, 15 mm long, 3.5 mm wide, free to the base; **petals** 11 mm long, 2.5 mm wide; **lip** red-brown, ovate, acute, slightly acuminate, minutely cellular-glandular, 5 mm long, 2.5 mm wide, the disc shallowly concave centrally, with a low, cordate callus at the base, the base rounded, flattened on the end, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1.5 mm broad, the anther red-brown, the stigma bilobed, edged in red-brown, the foot rudimentary.

ECUADOR: Prov. of Pichincha: epiphytic on low vegetation on a wet embankment near Mindo, alt. ca. 2400 m, 1 Feb. 1978, *C. Luer & J. Luer 2409* (Holotype: SEL); epiphytic in cloud forest between Calacali and La Liberia, alt. 2100 m, 7 Apr. 1984, *C. Luer, S. Dalström, T. Höijer & A. Hirtz 10010* (MO).

This attractive species is apparently endemic in the forests of the western slopes of Mt. Pichincha where it has been encountered several times. The habit is similar to that of many other species, but the large, star-shaped flowers with long-acuminate, red-brown-veined sepals and petals easily distinguish the species.

Platystele stenostachya (Reichb. f.) Garay, Caldasia 8: 520, 1962.

Bas.: *Pleurothallis stenostachya* Reichb. f., Linnaea 18: 399, 1844.

Ety.: From the Greek *stenostachys*, "a narrow spike," referring to a slender part of the inflorescence.

Syn.: *Pleurothallis dubia* A. Rich. & Gal., Ann. Sci. Nat. Bot. 3(3): 16, 1845.

Ety.: From the Latin *dubius*, "doubtful," probably concerning the author's opinion of the species.

Syn.: *Pleurothallis minutiflora* S. Wats. Proc. Amer. Acad. Arts 23: 286, 1888.

Ety.: From the Latin *minutiflorus*, "small-flowered," referring to the size of the flowers.

Syn.: *Humboldtia dubia* (A. Rich. & Gal.) Kuntze, Rev. Gen. Pl. 2: 667, 1891.

Syn.: *Humboldtia stenostachya* (Reichb. f.) Kuntze, Rev. Gen. Pl. 2: 668, 1891.

Syn.: *Pleurothallis myriantha* Lehm. & Krzl., Bot. Jahrb. Syst. 26: 445, 1899.

Ety.: From the Greek *myrianthos*, "very many-flowered," referring to the floriferous habit.

Syn.: *Pleurothallis lankesteri* Rolfe, Bull. Misc. Inform. 210, 1914.

Ety.: Named in honor of E. Lankester who sent the specimen to Rolfe.

Syn.: *Pleurothallis dubia* var. *myriantha* (Lehm. & Krzl.) Schltr., Repert. Spec. Nov. Regni Veg. Beih. 17: 20, 1922.

Syn.: *Pleurothallis stenostachya* var. *lankesteri* (Rolfe) Ames, Sched. Orchid. 7: 31, 1924.

Plant small, epiphytic, densely caespitose; roots slender. Ramicauls erect, slender, 5-55 mm long, partially enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, 10-55 mm long including the petiole 5-20 mm long, the blade narrowly elliptical-obovate, subacute, 3-8 mm wide, the base narrowly cuneate into the petiole. **Inflorescence** racemose, 1-4congested, distichous, successively several-flowered racemes up to 33 mm long, 1-4 flowers open simultaneously, borne by a suberect, slender peduncle 3-15 mm long, from near the apex of the ramicaul; floral bracts thin, 1 mm long; pedicels 1.5-2.5 mm long; ovary 0.5-1 mm long, 3-angled; **sepals** light yellow-green to orange, ovate, acute to subacute or obtuse, 1-veined, glabrous, the dorsal sepal concave, 1.25-1.5 mm long, 0.5-0.9 mm wide, the lateral sepals oblique, 1.25-1.75 mm long,

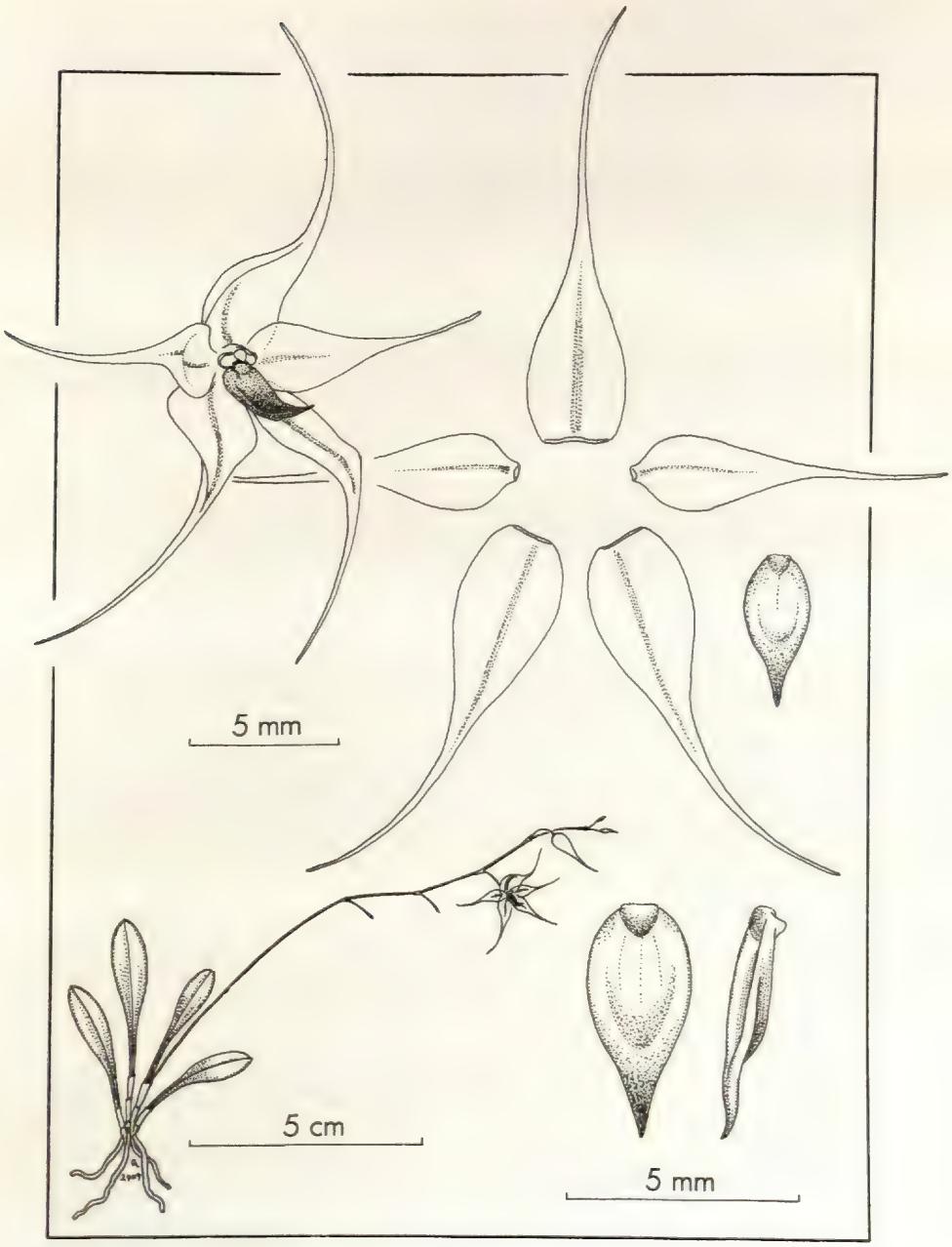

Plate 64. *Platystele stellaris* Luer

0.5-0.9 mm wide, connate near the base; **petals** translucent yellow to orange, elliptical-obovate to narrowly triangular, acute, 0.9-1.25 mm long, 0.15-0.4 mm wide; **lip** orange, red, purple to purple-black, thick, cellular-glandular, elliptical, 1-1.25 mm long, 0.6-0.75 mm wide, the apex rounded, the base subtruncate, with a small glenion; **column** cucullate, 0.5 mm long and broad, the stigma bilobed, hooded, the foot rudimentary long.

MEXICO: Temperirtes, *Leibold 20* (Herb. Schldl.); Edo. Chiapas: Monte Líbano, east of Ocosingo, 17 July 1954, *R. L. Dressler 1438*(AMES), 20 Aug. 1954, *R. L. Dressler 1698* (AMES), without locality, 18 June 1976, *E. Greenwood 217* (SEL). Edo. Oaxaca: road Huantla to San Antonio, alt. 800 m, 6 July 1939, *R. E. Schultes 800* (AMES). Edo. Vera Cruz: on rocks between mosses, alt. 3-4000 ft., 1840, *Galeotti 5168* (G, K); Zacuapán, Dec. 1912, *C. A. Purpus 2123* (G); same area, 12 Aug. 1933, *C. A. Purpus 2995* (AMES); near Zacuapán, alt. ca. 900 m, 29 Aug. 1932, *O. Nagel 1318* (MO, SEL); near Huatusco, alt. ca. 1000 m, 22 Sept. 1954, *Florence Johnson 954-25* (SEL). Xalapa *Leibold 547* (K). Mirador, Aug. 1841, *Liebman 344* (K).
BELIZE: Stann Creek Railway, alt. 100 ft., 20 Feb. 1929, *W. A. Schipp 843* (AMES); Stann Creek District, 21 Dec. 1937, *P. H. Gentle 2155* (AMES, SEL); 2 miles east of San José, *P. M. Catling & V. R. Brownell B22* (AMES, DAO). Without locality, 1912, *M. E. Peck 498* (K).
GUATEMALA: Dept. of Alta Verapaz: Cubilquitz, Aug. 1900, *H. von Türckheim 7783* (AMES). Dept. of Izabal: 40 miles from the coast, alt. 175 ft., 3 Sept. 1930, *Margaret Ward Lewis 3* (AMES); between Puerto Barrios and Santo Tomás, alt. 5-15 m, 30 Dec. 1941, *J. A. Steyermark 42018* (AMES). Dept. of Petén: Tikál, alt. 300 m, 15 Nov. 1945, *A. Molina 15771* (SEL); same area, 24 Oct. 1969, *R. T. Ortiz 381* (MO); same area, alt. 180 m, 23 Feb. 1981, *C. Luer & J. Luer 5861* (SEL); Chocón forests, flowered in cultivation, Aug. 1887, *S. Watson s.n.* (AMES, type of *P. minutiflora*); around Matasano and Retaluleu, alt. 1000 m, 19 June 1882, *F. C. Lehmann 1598* (K, type of *P. myriantha*). Dept. of Retatulen: near Matasano and Bola de Oro, alt. 1000 m, 19 Jun2 1882, *F. C. Lehmann 1598* (G).
HONDURAS: Dept. Atlántida: Lancetilla Valley near Tela, alt. 200-600 m, 6 Dec. 1927, *P. C. Standley 54346* (AMES). Dept. of Comayagua: Pito Solo, alt. 200 ft., 8 Aug. 1932, *J. B. Edwards 221* (AMES). Dept. of Cortés: El Jaral, Lake Yajoa, alt. 2000 ft., 2 Nov. 1932, *J. B. Edwards 302* (K); Río Lindo, alt. 630 m, 13 Dec. 1946, *L. O. Williams & A. Molina 11368* (AMES, MO); Río Lindo near Peña Blanca, 2 Apr. 1947, *P. H. Allen 4449* (SEL). Dept. of Olancho: Río Olancho, alt. 350-400 m, 8 Feb. 1987, *T. Croat & D. Hannon 64518* (MO).
NICARAGUA: Zelaya: Río Prinzapolka, alt. 100 m, *Pipoly 4783* (MO); Rosita, *J. Atwood, Marshall & Neill 6986* (MO).
COSTA RICA: Prov. of Alajuela: La Ventolera, 17 Feb. 1924, *P. C. Standley 34749* (AMES). Prov. of Cartago: Orosí, 30 Mar. 1924, *P. C. Standley 39845* (AMES). Prov. of Guanacaste: Río Liberia, alt. 680-780 m, 21 Jan. 1930, *C. W. Dodge & W. S. Thomas 6367* (AMES). Prov. of Limón: 3 Km east of Finca Waldeck, 25 Feb. 1972, *R. L. Dressler, R. Andrews & H. Kennedy 4155* (MO). Prov. of San José: vicinity of El Generál, alt. 850 m, Jan. 1936, *A. F. Skutch 2397* (AMES, K, MO, SEL). Without locality, 1913, flowered in cultivation at Kew, 24 July 1923, *C. H. Lankester s.n.* (K, type of *P. lankesteri*).
PANAMA: Prov. of Chiriquí: Boquete, alt. 1200-1500 m, 24 July 1940, *R. E. Woodson & R. V. Sherry 800* (AMES, MO); Boquete, alt. 5000 ft., 23 July 1959, *W. L. Stern, K. Chambers, J. Dwyer & J. Ebinger 1070* (MO); Fortuna dam site, Aug. 1976, *R. L. Dressler s.n.* (SEL); Cerro Hornito, alt. 1700 m, 14 Dec. 1976, *C. Luer, A. Luer, R. L. Dressler et al. 1316* (SEL). Prov. of Herrera, alt. 700 m, 19 Dec. 1977, *J. P. Folsum, R. Channell & G. Small 7014* (MO); Monte de Chepo, alt. 900 m, 20 May 1987, *G. McPherson 10950* (MO). Prov. of Los Santos: Cerro Grande, alt. 2400-2800 m, 8 June 1967, *W. H. Lewis, R. K. Baker, B. McBryde & R. Oliver 2213* (MO).
COLOMBIA: Dept. of Chocó: between Quibdó and Bolívar, Aug. 1964, *A. Kapuler & V. Hascall 256* (COL). Dept. of Valle del Cauca: Córdoba, dense forest, alt. 50-100 m, 17 Feb. 1939, *E. P. Killip & H. Garcia 33407A* (AMES); Hoya del Río Sanquinini, La Laguna, alt. 1250-1400 m, 10 Dec. 1943, *J. Cuatrecasas 15642* (AMES).
ECUADOR: Prov. of Napo: north of Lumbaqui, alt. 850 m, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11734* (MO); between Archidona and Coca, alt. 1000 m, 17 Feb. 1990, *S. Dalström & L. Åmby 1363* (MO). Prov. of Pastaza: Mera, alt. 1100 m, 2 Apr. 1956, *E. Asplund 20002* (S); below Río Negro, alt. 1200 m, 6 Mar. 1963, *C. H. Dodson & L. B. Thien 2330* (SEL); Río Negro, 31 July 1975, *C. Luer, G. Luer & S. Wilhelm 504* (SEL). Prov. of Tungurahua: Churosinguna region, alt. 1550 m, 21 Jan. 1971, *B. MacBryde 135* (AMES).
VENEZUELA: Edo. Sucre: near Duaca, alt. 1700 m, July 1961, G. C. K. Dunsterville 647; Peninsula de Paria, Cerro de Humo, alt. 1060 m, 1 Mar. 1966, *J. Steyermark 94831A* (VEN) Peninsula de Paria, above Las Melenas, alt. 730-1050 m, 1 Dec. 1979, *J. A. Steyermark & R. Liesner 120947* (MO, VEN); Peninsula de Paria, Cerro de Humo, alt. 1060 m, Río Tacarigua, alt. 900 m, 23 Feb. 1980, *J. A. Steyermark, R. Liesner & V. Carreño E. 121625* (MO, VEN); same area, from ranch to summit of ridge, alt. 700-900 m, 23 Feb. 1980, *J. A. Steyermark, R. Liesner & V. Carreño 121629* (MO), C. Luer illustr. 14455.

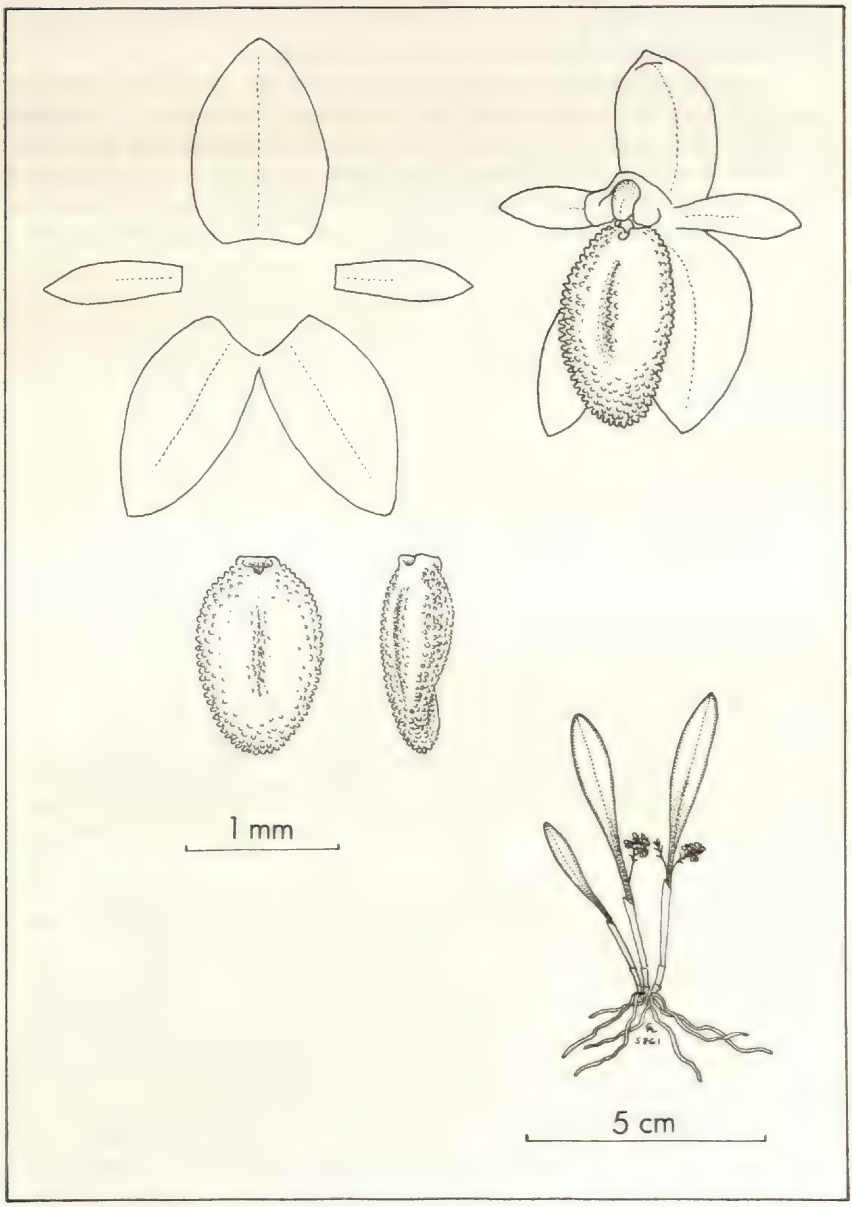

Plate 65. *Platystele stenostachya* (Reichb. f.) Garay

This variable species, widely distributed from Mexico into Ecuador, is one of the most common species of the genus in Middle America, and one of the most common species of all the orchids in Middle America. It is no surprise that it was the first species of the genus to be described.

In addition to the marked degree of variation in the sizes of the vegetative parts, the floral parts are also very variable in size, and in color. The sepals vary from acute to obtuse. A Costa Rican form with a deep purple lip was described as *Pleurothallis lankesteri*. Usually the minute flowers are produced successively, but often two or three occur simultaneously in short racemes that emerge from near the apex of elongated ramicauls. The thick, ovate lip, about as large as the lateral sepals, is covered by large, capitate cells.

Platystele stevensonii Luer, Selbyana 3: 234, 1977.

Ety.: Named in honor of F L Stevenson, of Chamblee, Georgia, who discovered and successfully cultivated this species.

Plant small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 3-5 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 10-20 mm long including a petiole 3-4 mm long, the blade narrowly elliptical-obovate, subacute to obtuse, 3-5 mm wide, narrowly cuneate below into the petiole. **Inflorescence** an erect to suberect, loose, distichous, flexuous, successively many-flowered raceme 5-15 cm long including the filiform peduncle ca. 2 cm long, emerging laterally from the ramicaul; floral bracts oblique, 0.75 mm long; pedicels 2-10 mm long; ovary 0.5 mm long; **sepals** translucent light rose, light yellow, to light brown, narrowly ovate, acute, long-acuminate, glabrous, the margins microscopically ciliate, the dorsal sepal 2.5-3.75 mm long, 0.8-1 mm wide, the lateral sepals oblique, 3-3.5 mm long, 0.8-1 mm wide, free to the base; **petals** colored as the sepals, narrowly linear-ovate, acute, shortly ciliate, 2-3 mm long, 0.2-0.5 mm wide; **lip** red, fleshy, cellular-glandular, elliptical-obovate with the apex rounded, 1-1.25 mm long, 0.6-0.75 mm wide, the base disc shallowly sulcate, the base subtruncate-concave with a small glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: without locality, F L Stevenson 61874-12, flowered in cultivation 18 June 1974, *C. Luer 318* (Holotype: SEL). Prov. of Morona-Santiago: east of Paute, alt. ca. 1800 m, 10 July 1977, *C. Luer, J. Luer, G. Luer & A. Andreetta 1681* (SEL); forest 3 Km north of Macas, alt. 1050 m, 15 Jan. 1989, *C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz 13897, 13898* (MO); Cordillera del Cutucú, between Mendez and Morona, alt. 950 m, 17 Jan. 1989, *C. Luer, J. Luer, P. Jesup, A. Jesup & A. Hirtz 13962* (MO). Prov. of Pastaza: between Río Negro and Mera, alt. 1500 m, 28 Mar. 1984, *C. Luer, S. Dalström, T Höijer & J. Kuijt 9780* (MO). Prov. of Tungurahua: between Río Verde and Río Negro, alt. 1500 m, 12 Apr. 1985, *C. Luer, J. Luer, A. Hirtz & W. Flores 11177* (MO). Prov. of Zamora-Chinchipe: along Río Zamora, alt. 950 m, 20 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 11944* (MO); Cordillera del Condor, east of Los Encuentros, alt. 1500 m, 19 May 1988, *C. Luer, A. Hirtz, W. Flores, A. Andreetta & W. Teague 13488* (MO).

This species is widely distributed in southern Ecuador. It is recognized by the hairlike racemes of spindly flowers, with the narrowly ovate, acuminate sepals and petals minutely ciliate, and the fleshy, elliptical lip with a rounded apex.

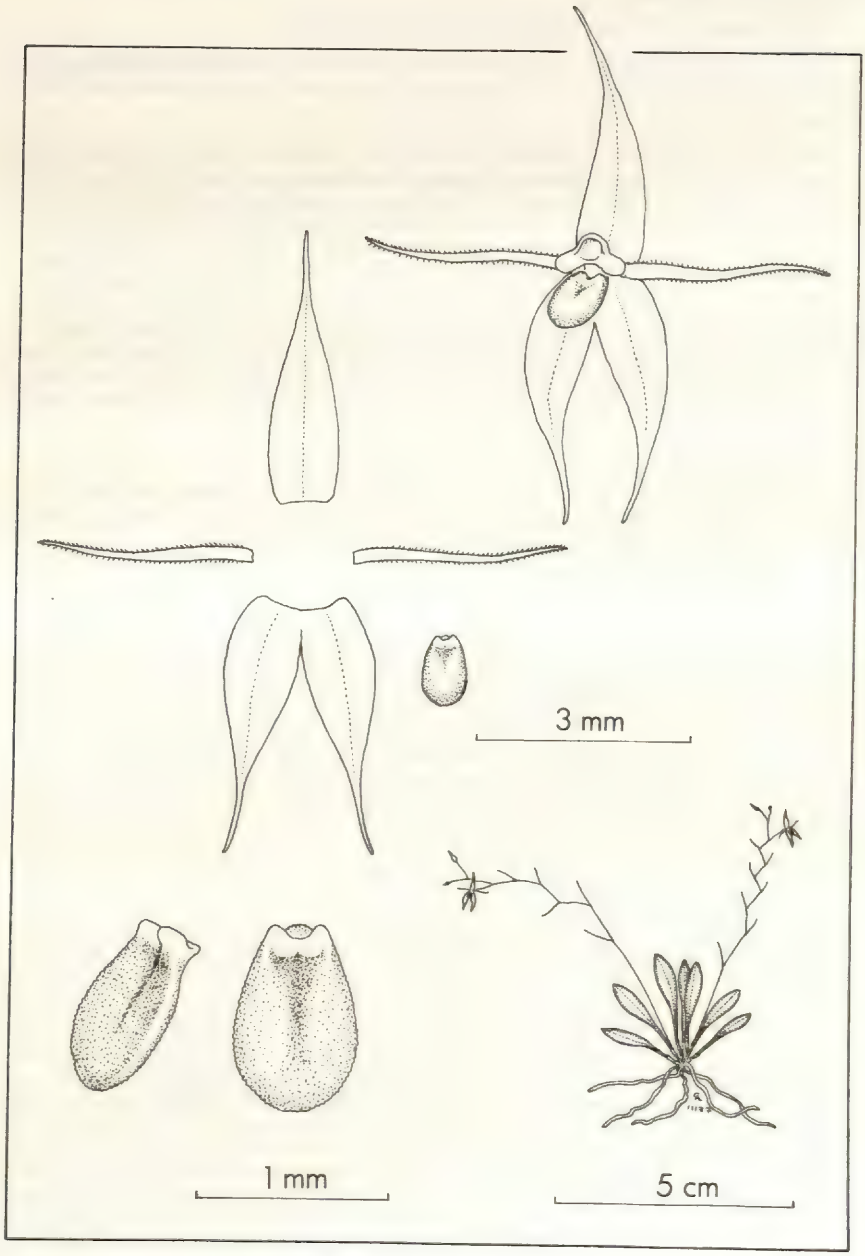

Plate 66. *Platystele stevensonii* Luer

Platystele stonyx Luer, sp. nov.

Ety: From the Greek *stonyx*, "a sharp point," referring to the lip.

Planta mediocris caespitosa, racemo laxo disticho minutifloro foliis petiolatis multilongiore, sepalis anguste ovatis acuminatis, petalis anguste linear-ovatis et labello anguste ovato late canaliculato apice acuto.

Plant small to medium in size for the genus, epiphytic, caespitose; roots slender. Ramicauls slender, erect, 4-10 mm long, enclosed by 2-3 thin, tubular sheaths. **Leaf** erect, coriaceous, petiolate, 1.5-4 cm long including the petiole 0.5-1.5 cm long, the blade elliptical, subacute to obtuse, 4-8 mm wide, the base cuneate into the slender petiole. **Inflorescence** a weak, loose, distichous, successively many-flowered raceme up to 15 cm long including the capillary peduncle up to 3 cm long, emerging laterally from the ramicaul; floral bract 1-2 mm long; pedicel 2.5-4 mm long; ovary 0.75 mm long; sepals purple to tan or cream, glabrous to microscopically cellular-glandular, narrowly ovate, acute, acuminate, 1-veined, the dorsal sepal 4-6 mm long, 1-1.5 mm wide, the lateral sepals 4-6 mm long, 1-1.25 mm wide; **petals** colored as the sepals, glabrous to microscopically ciliate, very narrowly linear-ovate, acute, acuminate, 3.5-5 mm long, 0.4-0.5 mm wide at the base; **lip** purple, cellular-glandular, thick, narrowly ovoid, acute, 2-3.5 mm long, 0.6-0.8 mm wide, the margins rounded, slightly revolute onto the back surface, the disc broadly channeled distal to a basal callus with a glenion; **column** 0.5 mm long, 0.75 mm wide.

COLOMBIA: Dept. of Nariño: east of La Cocha, alt. 3000 m, 26 Jan. 1987, *C. Luer, J. Luer & R. Escobar 12519* (Holotype: MO); Intend. of Putumayo: between San Francisco and Mocoa, alt. 2100 m, 27 Jan. 1987, *C. Luer, J. Luer & R. Escobar 12547* (SEL); between La Cocha and Sibundoy, alt. 3000 m, 31 July 1978, *C. Luer, J. Luer, R. Escobar et al. 3104* (SEL).
ECUADOR: Prov. of Carchi: cloud forest above Mariano Acosta, alt. 3400 m, 9 Feb. 1979, *C. Luer, J. Luer & R. Escobar 3959* (SEL);

Platystele stonyx occurs in southern Colombia and northernmost Ecuador. It is most closely related to the Ecuadorian *P. acicularis* with the ranges of the two taxa overlapping in northern Ecuador. *Platystele stonyx* is distinguished by the microscopically cellular-glandular, long-acuminate sepals; similar, narrowly linear petals; and a thick, narrowly ovoid, acute lip that is superficially but broadly channeled down the center beyond a basal callus with a prominent glenion.

Platystele taylorii Luer, Selbyana 3: 30, 1976.

Ety.: Named in honor of Peter Taylor of the Royal Botanic Gardens at Kew, who first discovered this species.

Plant extremely small, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 1-5 mm long, enclosed by 1-2 thin, tubular, sheaths. **Leaf** erect, coriaceous, 4-13 mm long including a petiole 1-3 mm long, the blade elliptical-obovate, obtuse, 2.5-5 mm wide, cuneate below into the petiole. **Inflorescence** a weak, suberect, loose, successively few-flowered raceme up to 30 mm long including the filiform peduncle 3-10 mm long, produced laterally from the ramicaul; floral bracts thin, 0.5 mm long; pedicels 1.5 mm long; ovary 0.3 mm long; **sepals** translucent light yellow, glabrous, ovate, acute, acuminate, 1-veined, the dorsal sepal 1.3-1.6 mm long, 0.6 mm wide, the lateral sepals oblique, 1.3-1.6 mm long, 0.6 mm wide, free to the base; **petals** translucent light yellow, narrowly triangular, acute, cellular-ciliate, 1.2 mm long, 0.2 mm wide; **lip** red-purple, ovate, acute, acuminate, 1.5-1.8 mm long, 0.6-0.8 mm wide, the base truncate, attached to the column-foot; **column** cucullate, 0.2 mm long, 0.4 mm broad, the stigma bilobed, the foot rudimentary.

PANAMA: Prov. of Panama: epiphytic on tree trunks along the Altos de Pacora road, alt. 650 m, 4 Mar. 1976, *C. Luer, J. Luer, P. Taylor & R. L. Dressler 741* (Holotype: SEL); La Eneida, Cerro Jefe, 6 Aug. 1968, *R. L. Dressler 3569* (MO).
ECUADOR: Prov. of El Oro: epiphytic in cloud forest above Zaruma, alt. 1800 m, 23 Feb. 1986, *C. Luer, J. Luer, A. Hirtz, W. Flores & A. Embree 12031* (MO).

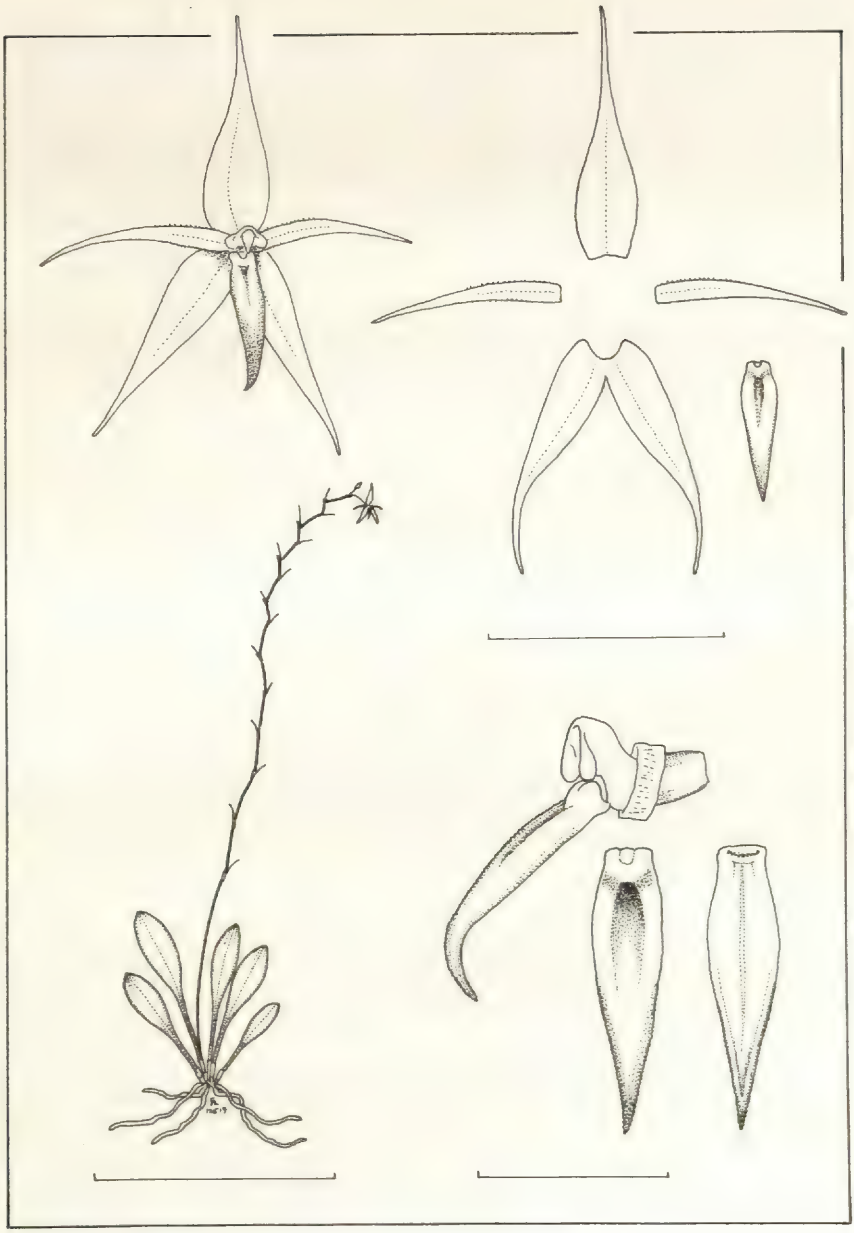

Plate 67. *Platystele stonyx* Luer

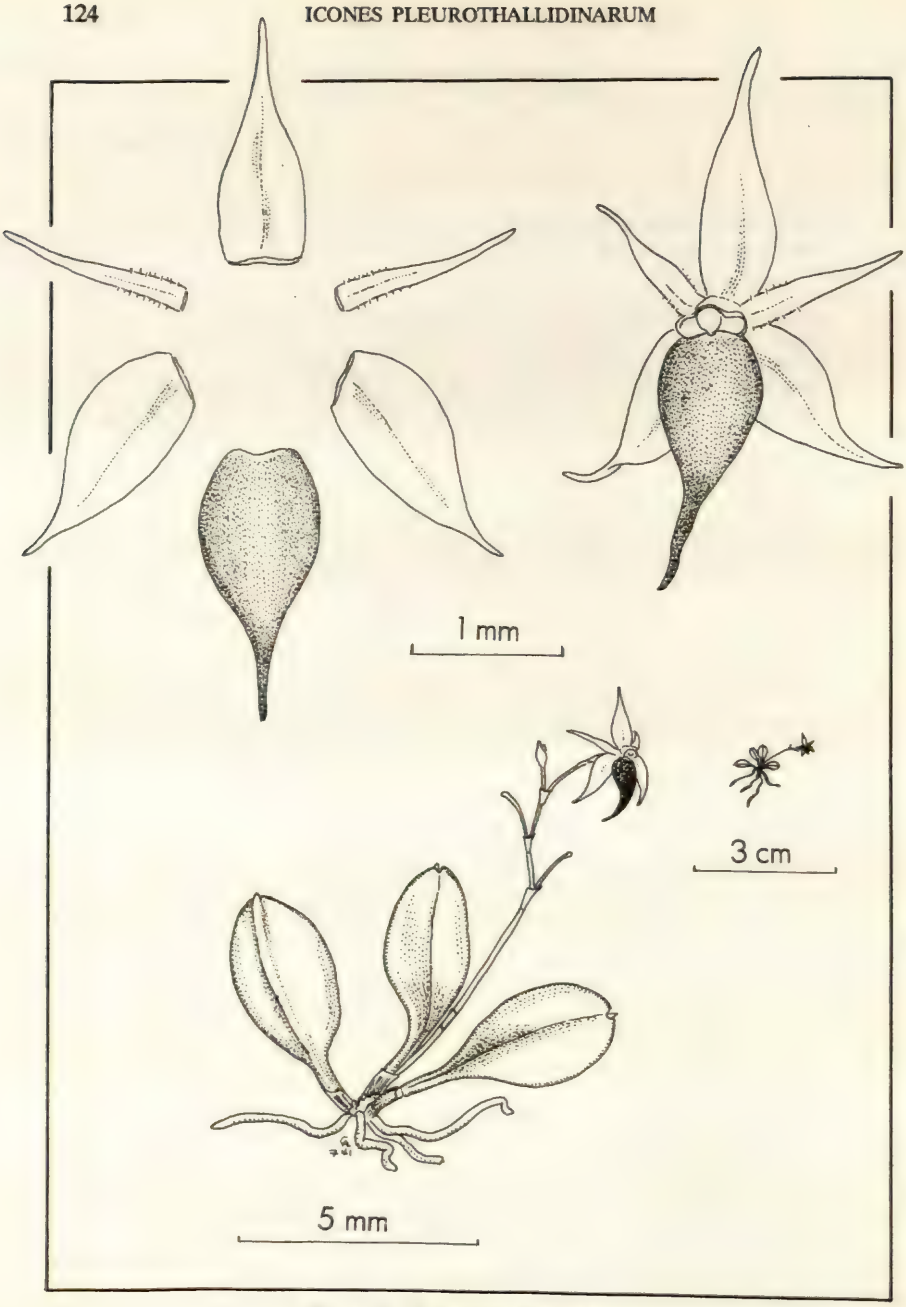

Plate 68. *Platystele taylorii* Luer

This species is reminiscent of a minute form of *Platystele oxyglossa*, except that the lip is larger than the sepals. Although so far identified from only two localities, one in eastern Panama and the other in southeastern Ecuador, it undoubtedly occurs elsewhere. It is difficult to find because of the minute habit usually embedded in moss.

Platystele teaguei Luer, Selbyana 5: 157, 1979.

Ety.: Named in honor of Walter Teague of San Francisco, CA., who discovered this species.

Plant medium in size, epiphytic, densely caespitose; roots coarse. Ramicauls erect, slender, 1-2 cm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, petiolate, 3-7 cm long including a petiole 0.5-2.5 cm long, the blade elliptical-obovate with the apex obtuse to rounded, 1-1.7 cm wide, the base cuneate into the petiole. **Inflorescence** an erect, loose, subsecund, successively several-flowered raceme with 2-4 flowers open simultaneously, up to 8 mm long including the slender peduncle up to 4 cm long, emerging laterally from the ramicaul; floral bracts thin, 2 mm long; pedicels 2-3 mm long; ovary 1 mm long; **sepals** translucent white, striped with red-purple along the veins, sparsely short-pubescent, the dorsal sepal ovate, 11.5 mm long, 2 mm wide, 3-veined, the apex acute, long-acuminate into a filiform tail, the lateral sepals ovate, oblique, 13 mm long, 2 mm wide, 2-veined, connate 2.5 mm, the apices acute, acuminate into filiform tails; **petals** white with a purple midvein, elliptical below the middle, glabrous, 2.5 mm long, 1 mm wide, tha apex acute, long-acuminate into a filiform tail; **lip** rose, suffused with purple, ovate-cordate, 3.5 mm long, 1.75 mm wide, the apex rounded and concave with involute margins toward the center of the disc, the disc with a glenion at the base, the basal lobes obtuse, incurved, embracing the column, the base fixed to the column-foot; **column** cucullate, 1 mm long, 1 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Imbabura: epiphytic in cloud forest above Apuela, alt. ca. 3000 m, July 1977, collected by W. Teague, flowered in cultivation in San Francisco, CA. 21 Apr. 1979, *C. Luer 4059* (Holotype: SEL); Mojanda, alt. 3400 m, Apr. 1984, *A. Hirtz 1679* (MO).

One of the more attractive species of the genus, *P. teaguei* is apparently confined to a small area high on the western declivity of the Andes of Ecuador where it has been found on only a few occasions. The white, red-striped, long-tailed sepals and petals are distinctive.

Platystele umbellata P. Ortiz, Orquideología 12: 136, 1977.

Ety.: From the Latin *umbellatus*, "umbellate," referring to the inflorescence.

Plant medium in size, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 10-15 mm long, partially enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, spathulate, petiolate, 2-4.5 cm long including the petiole ca. 1 cm long, the blade elliptical-spathulate with the apex rounded, 0.7-1.5 cm wide, the base cuneate into the petiole. **Inflorescence** a very congested, subumbellate, simultaneously 5- to 9-flowered raceme, about 1 mm long, borne by an erect, slender peduncle 10-15 mm long, emerging laterally from above the middle of the ramicaul; floral bracts loose, imbricating, oblique, 1 mm long; pedicels 0.5 mm long; ovary 0.5 mm long; **sepals** translucent red-purple, ciliate, broadly ovate-suborbicular, obtuse, the dorsal sepal 1 mm long, 0.8 mm wide, the lateral sepals free to the base, 0.9 mm long, 0.8 mm wide; **petals** translucent red-purple, ciliate, elliptical, subacute, 0.8 mm long, 0.3 mm wide; **lip** red, thick, cellular-glandular, ovate-suborbicular with the apex rounded, 1 mm long, 0.9 mm wide, the base rounded, with a small glenion, attached to the column-foot; **column** cucullate, 0.3 mm long, 0.7 mm broad, the stigma bilobed, the foot rudimentary.

COLOMBIA: Dept. of Antioquia: Munic. of Cocorná, "Vallesol," alt. 600 m, Mar, 1977, flowered in cultivation by L. C. Vieira in Medellin, *P. Ortiz 916* (Holotype: COL); flowered in cultivation by M. & O. Robledo, 14 Oct. 1977, *C. Luer 2040* (SEL).

This species was described from a collection at a relatively low altitude in the Central Cordillera of Colombia. A collection of a similar but different species (*P. ortiziana*) from Bahía Solano near the Pacific coast was mentioned as additional material examined and a photograph of this additional material was published on page 147 in the article in which *P. umbellata* was described.

The umbel of *P. umbellata* is composed of several, overlapping, minute, simultaneous flowers, one of the smallest of the genus. The tiny, obtuse sepals and petals are ciliate, and the ovate, cellular-glandular lip is a trifle larger than the lateral sepals, the margins are not revolute, and the apex is rounded.

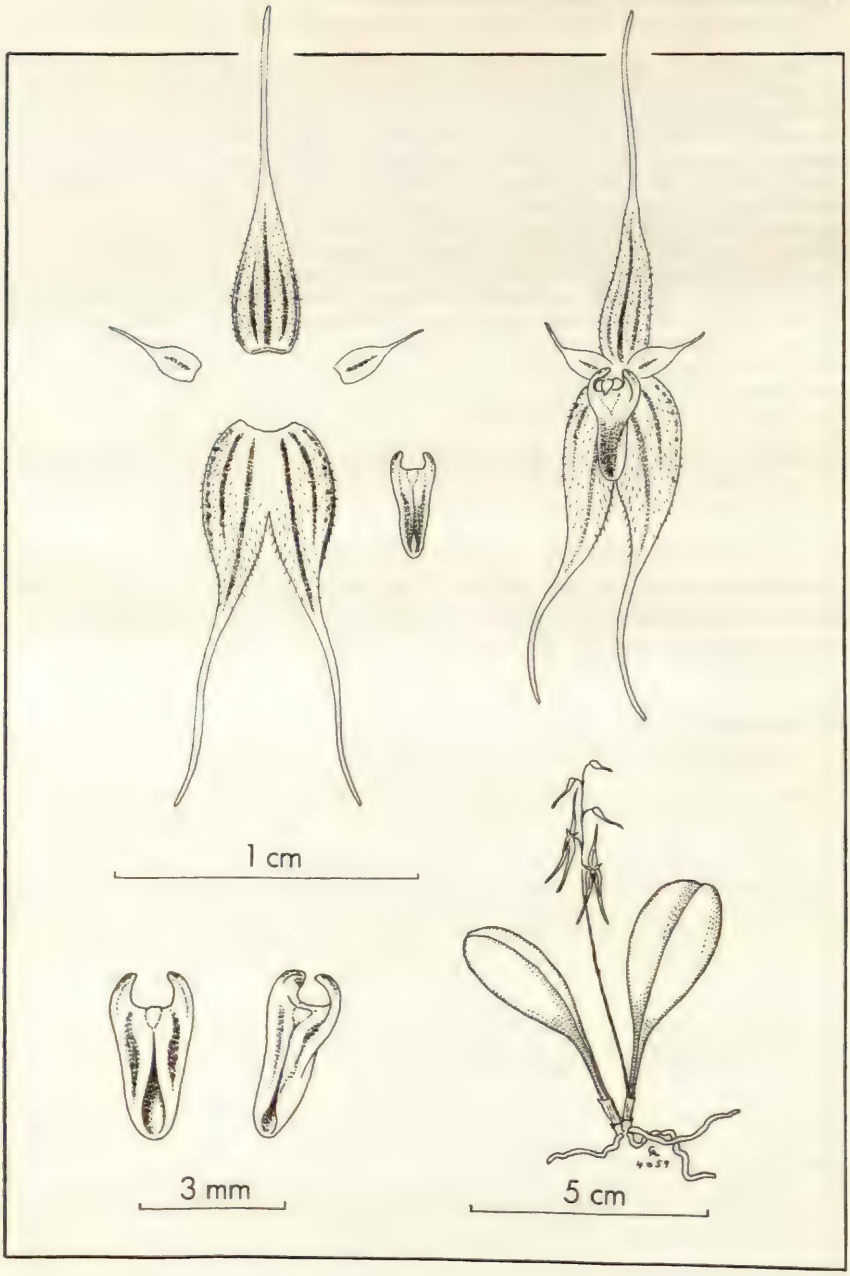

Plate 69. *Platystele teaguei* Luer

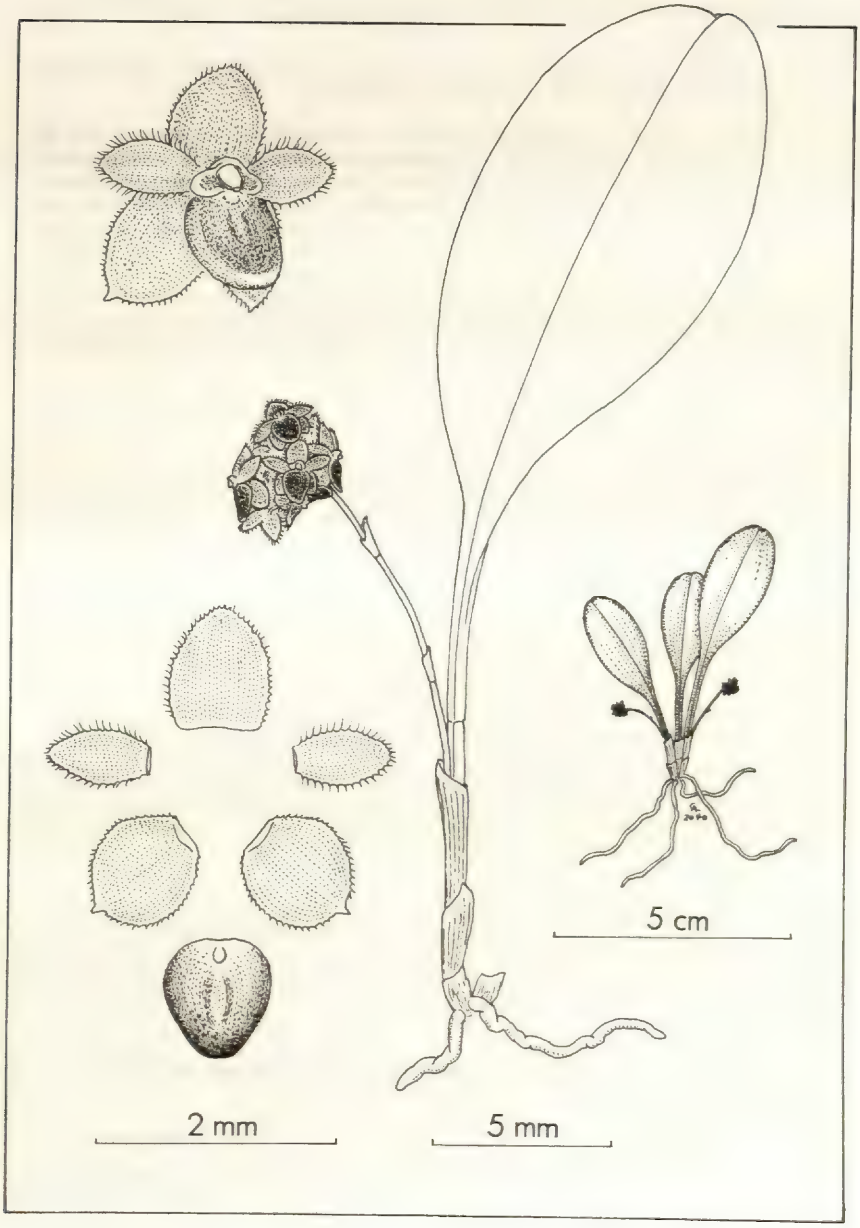

Plate 70. *Platystele umbellata* P. Ortiz

Platystele vetulus Luer & Hirtz, sp. nov.

Ety: From the Latin *vetulus*, "a little, old man," referring to the long, white hairs of the flower parts.

Planta parva caespitosa, racemo laxo disticho deinceps multifloro foliis petiolatis multilongiore, sepalis petalis labelloque albis ovatis acuminatis longiciliatis.

Plant small, epiphytic, caespitose; roots filiform. Ramicauls slender, erect, 5-8 mm long, enclosed by 2-3 tubular sheaths. **Leaf** erect, coriaceous, long-petiolate, 20-30 mm long including the petiole 10-20 mm long, the blade elliptical, obtuse, 5-6 mm wide, the base cuneate into the slender petiole. **Inflorescence** a weak, loose, distichous, successively many-flowered raceme up to 15 cm long including the capillary peduncle ca. 3 cm long, emerging laterally from the ramicaul; floral bract 1 mm long; pedicel 3 mm long; ovary 0.5 mm long; **sepals** white, long-ciliate, ovate, the acute apex long-acuminate, 1-veined, the dorsal sepal 3.5 mm long, 1 mm wide, the lateral sepals 3 mm long, 1 mm wide; **petals** white, long ciliate, very narrowly ovate, acute, acuminate, 2.75 mm long, 0.25 mm wide; **lip** white, long-ciliate, suborbicular below the middle, 1.25 mm long, 0.6 mm wide, the acute apex acuminate, nearly as long as the blade; **column** 0.5 mm long.

ECUADOR: Prov. of Pichincha: epiphytic in cloud forest above Chiriboga, alt. 2000 m, Sept. 1984, *A. Hirtz 1902* (Holotype: MO), C. Luer illustr. 11297.

The long, white, ciliate hairs bordering all the white floral parts are unique in the genus. Except for the long cilia, the flowers would be similar to those of several other species, e.g. *P. oxyglossa*, of the genus.

Platystele viridis Luer, Phytologia 54: 387, 1983.

Ety.: From the Latin *viridis*, "green," referring to the color of the flowers.

Plant large for the genus, epiphytic, caespitose; roots slender. Ramicauls erect, slender, 2.5-3.5 cm long, enclosed by 3-4 loose, thin, ribbed, tubular sheaths. **Leaf** erect, thinly coriaceous, long-petiolate, 5-7 cm long including a petiole 2-3 cm long, the blade narrowly obovate, obtuse, 1.2-1.5 cm wide, cuneate below into the slender petiole. **Inflorescence** an erect, subdense, simultaneously many-flowered raceme up to 20 cm long including the slender peduncle 6-7 cm long, emerging laterally from the ramicaul; floral bracts thin, 1.5 mm long; pedicels 2 mm long; ovary 1 mm long; **sepals** and petals green, glabrous, the dorsal sepal narrowly ovate, narrowly obtuse, 4 mm long, 1.25 mm wide, the lateral sepals similar, parallel, 4 mm long, 1 mm wide, connate 1 mm; **petals** oblong, oblique, acute, 3 mm long, 1.75 mm wide; **lip** green, thick, cellular-glandular, oblong, obtuse, 1.6 mm long, 0.5 mm wide, the base subtruncate with a large, ovoid glenion, fixed to the column-foot; **column** cucullate, 0.5 mm long, 0.75 mm broad, the stigma bilobed, the foot rudimentary.

ECUADOR: without collection data, flowered in cultivation by Mr. and Mrs. H. Phillips Jesup in Bristol, CT., 28 March 1982, *C. Luer 7425* (Holotype: SEL).

This species has been in cultivation by Mr. and Mrs. Jesup in Bristol, Connecticut for many years. Unfortunately, nothing is known about the origin of the plant, the only information on the label indicating Ecuador. It probably had been obtained from J & L Orchids in Easton, CT.

Platystele viridis, vegetatively one of the largest of the genus, is characterized by a tall inflorescence of numerous, simultaneous, comparatively large, green flowers. The sepals are ovate, the laterals partially connate, and the lip is oblong and obtuse with a large, shallow glenion.

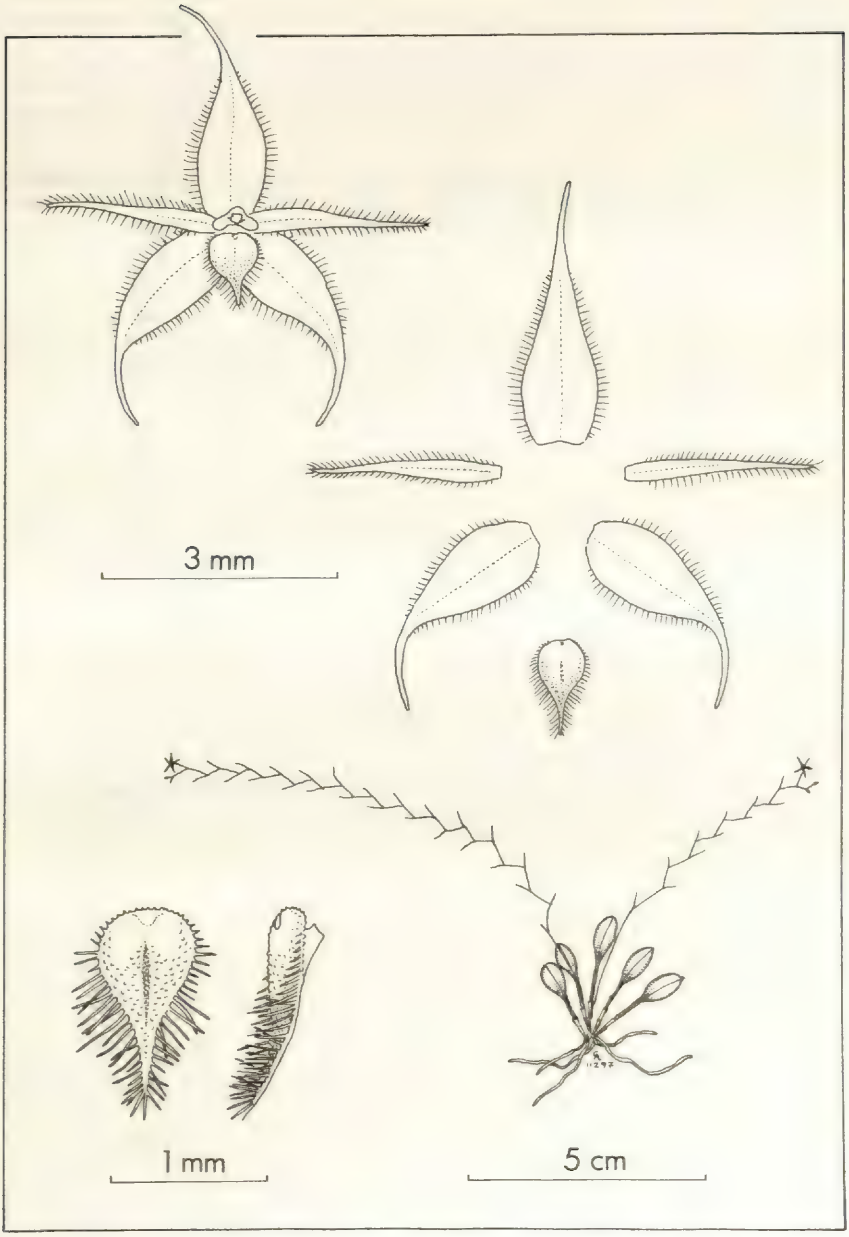

Plate 71. *Platystele vetulus* Luer & Hirtz

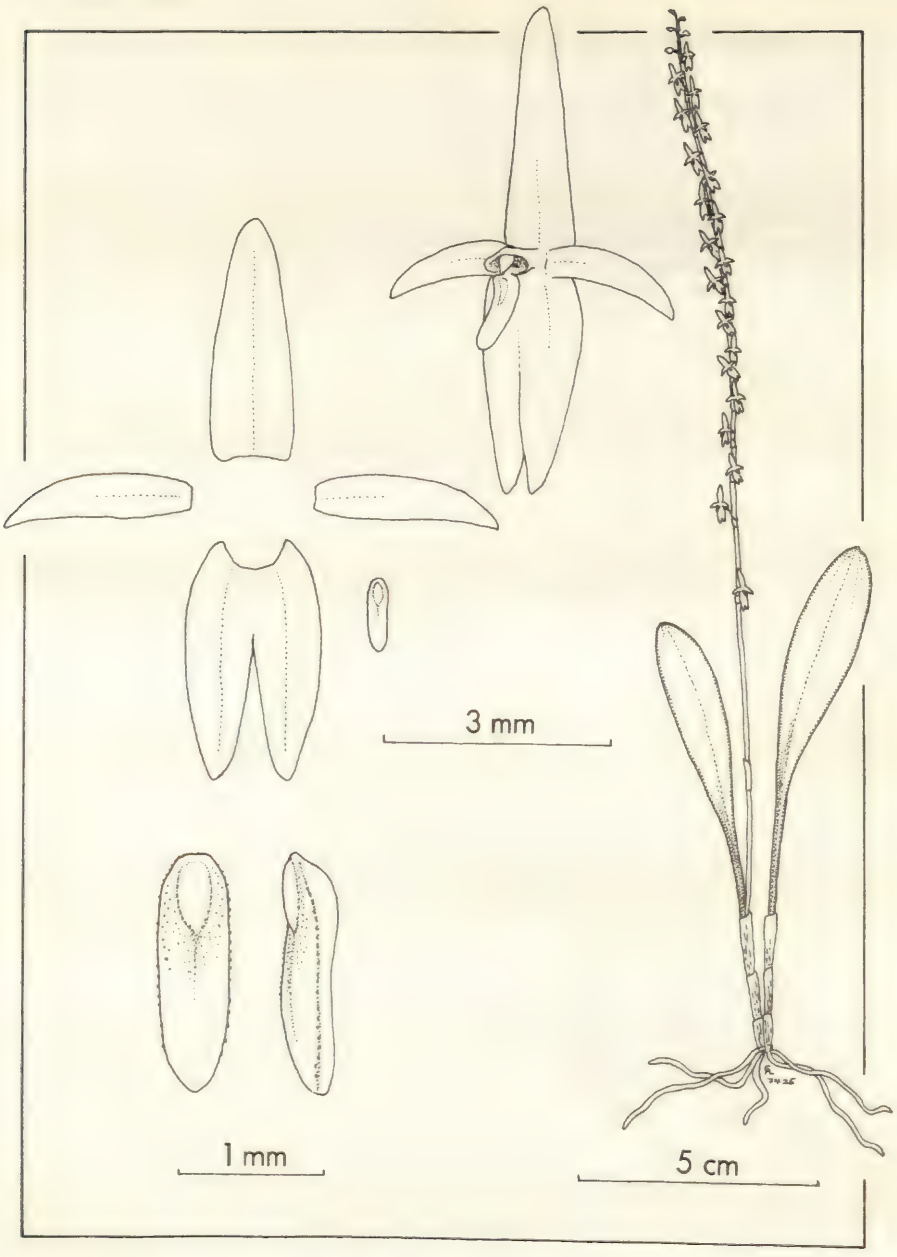

Plate 72. *Platystele viridis* Luer

Platystele zeus Luer & Hirtz, sp. nov.

Ety.: Named for Zeus, the greatest of the mythological Greek Olympians.

Planta pro genere grandis floribus maximis, foliorum marginibus undulatis, sepalis brevipubescentibus, sepalo dorsali ovato longissime caudato, synsepalo longo ovato brevicaudato, petalis parvis suborbicularibus erosis, labello oblongo pubescenti canaliculato cum lobis basalibus columnam amplectentibus.

Plant large for the genus, epiphytic, caespitose; roots stout. Ramicauls erect, 10-15 mm long, enclosed by 2-3 thin, ribbed, imbricating sheaths. **Leaf** erect, coriaceous, long-petiolate, 3.5-5 cm long including a petiole 1.5-2 cm long, the blade elliptical-ovate with undulate margins, subacute to obtuse, 1.2-2 cm wide, the base cuneate into the petiole. **Inflorescence** an erect or suberect, distantly successively few-flowered raceme, 8-13 cm long including the slender peduncle 5-7 cm long, emerging laterally from the ramicaul; floral bracts thin, 3 mm long; pedicels 15-20 mm long; ovary 3 mm long; **sepals** translucent, suffused with rose, short-pubescent, ciliate, 3-veined, the dorsal sepal ovate, with the acute apex long-attenuate, 30-40 mm long, 6 mm wide, 3-veined, the blade 10 mm long, the tail white, tubular, formed by revolute margins, the lateral sepals connate 25 mm into an ovate lamina, 30-35 mm long, 9 mm wide, the slender, caudate apices white, free for 10 mm; **petals** translucent, suborbicular, obtuse, 2 mm long, 2 mm wide, the margins minutely erose; **lip** rose, pubescent, oblong, obtuse, thick, erose, 8 mm long, 3 mm wide, the disc with a longitudinally channeled, with an oblong, lightly channeled callus above the base, the base with lobes encircling the column, fixed to the column-foot; **column** cucullate, 1 mm long, the stigma bilobed, the foot rudimentary.

ECUADOR: Prov. of Pastaza: epiphytic in cloud forest along Río Zuñag, alt. 2400 m, 24 Feb. 1990, *A. Hirtz, S. Dalström, L. Årnby, J. del Hierro, E. Astorga, S. Ortega & J. Cabezas 4631* (Holotype: MO; Isotype: K).

This species is the greatest known in the genus. It occurs in a remote and inaccessible region of the eastern slope of the Andes of central Ecuador where it was recently discovered by an expedition led by Alexander Hirtz. For the genus the leaves are large with undulate margins and long-petiolate. The flowers are huge for the genus, 7.5 centimeters between the tips of the tails of the dorsal and lateral sepals, and borne distantly in a few-flowered raceme. The sepals are ciliate and shortly pubescent; the petals, small and suborbicular; and the lip is oblong, pubescent and channeled with basal lobes embracing the column.

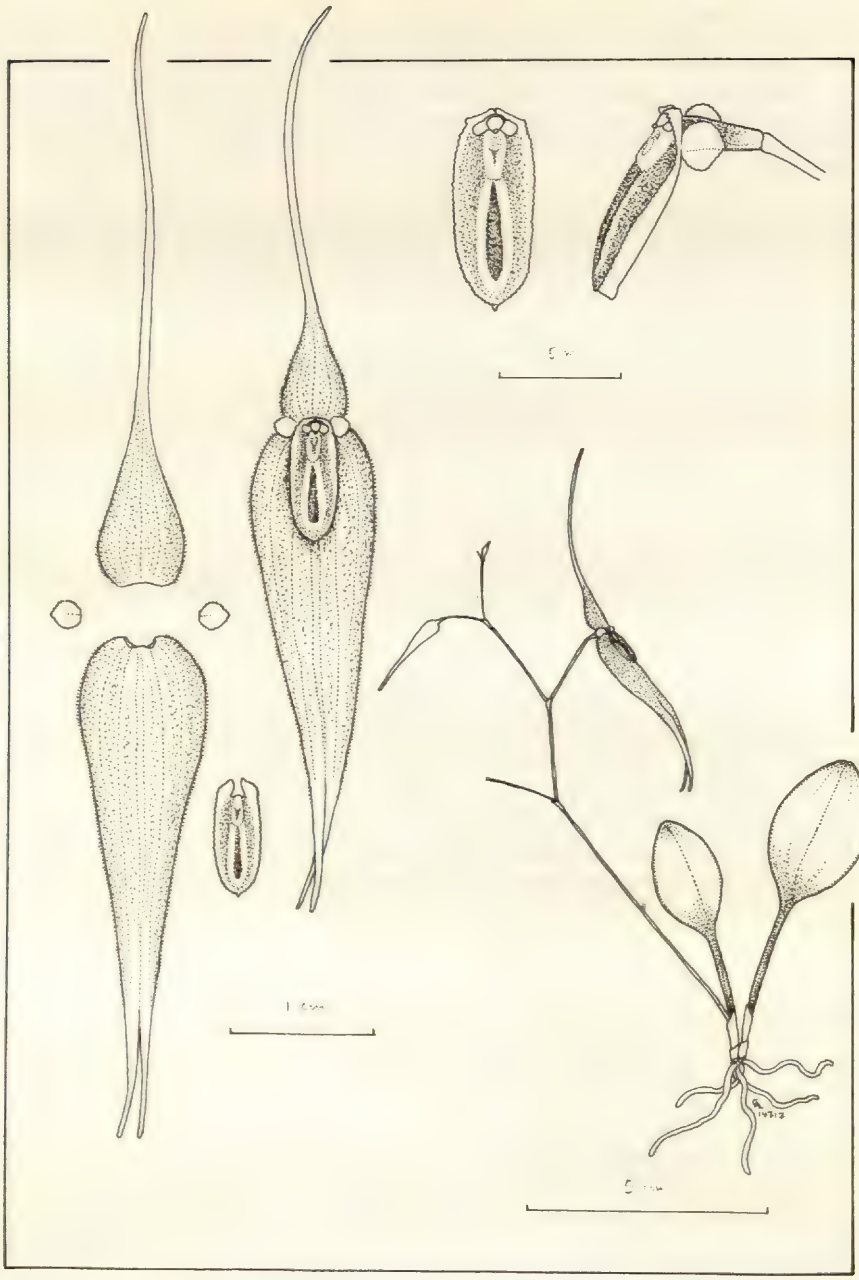

Plate 73. *Platystele zeus* Luer & Hirtz

GLOSSARY

OF TERMS AS USED IN THE GENUS *PLATYSTELE*

abscission layer, the site where the leaf dehisces (separates) from the ramicaul, separate from the annulus.
acuminate, the margins of the leaf or floral part concave toward the apex, tapering into a piont.
acute, applied to the tip of the leaf or floral part, the sides meeting at an angle less than 90°.
annulus, a thickened ring surrounding the ramicaul at the emergence of the inflorescence, present in all species of *Platystele*.
apiculate, the apex with an apiculum, an abrupt point.
attenuate, long-acuminate.
Bas.:, basionym, a name in a different genus or other combination upon which a later name or combination is based.
caespitose, with abbreviated rhizomes, the ramicauls approximate or produced in tufts.
callus, a thickening or a protuberance on the disc of the lip.
capsule, a fruit.
carina, a low lamella or keel, an elongated thickening or callus.
canaliculate, channeled, sulcate, with a longitudinal groove.
caudate, as applied to the floral parts, the apex terminating in a tail.
cellular-glandular, with prominent glandular or capitate cells, with a cobble-stone appearance.
ciliate, with hairs (cilia) on the margin.
cleistogamous, a flower self-fertilized without opening.
congested, the inflorescence densely flowered, the flowers closely spaced.
connate, inseparable, or united.
coriaceous, of leathery texture.
cuneate, wedge-shaped, as applied to the base of the leaf.
dentate, denticulate, with a toothed margin.
disc, the upper surface of the central portion of the lip.
distichous, alternating in two opposite ranks.
elliptical, shaped like an ellipse, widest at the middle.
entire, with smooth or unlobed margins.
epiphytic, growing upon another plant, but not parasitic.
erect, perpendicular in relationship to the horizon.
erose, with the margin irregularly denticulate.
Ety.:, etymology, the derivation of the name.
filamentous, filiform, slender as a hair or thread.
fimbriate, the margin fringed.
flexible, capable of being bent and returning to the original state.
flexuose, bent alternately in opposite directions; zigzag.
fusiform, ellipsoid, spindle-shaped, widest at the middle.
glabrous, smooth, without hairs.
glenion, a circular structure near or at the base of the disc, probably a pollinator enticement.
holotype, the specimen upon which the taxon is based.
isotype, any duplicate of the holotype, that is, any specimen that is part of the same collection as the holotype.
lamella, a tall carina or keel, a plate-like thickening or callus.
lax, loose, the inflorescence laxly or loosely flowered, the flowers distantly spaced.
nerve, vein, the longitudinal structure(s) or "rib(s)" of the floral parts.
obovate, egg-shaped in outline, widest between the middle and the apex.
obtuse, applied to the tip of the leaf or floral part, the sides meeting at an angle more than 90°.
ovate, egg-shaped in outline, widest between the base and the middle.
ovoid, a solid, ovate in outline.
pandurate, violin-shaped, narrowest near the middle.
papillose, covered with papillae or large, capitate cells.
pendent, hanging or suspended from its source.
pubescent, more or less covered with hairs.
pyriform, pear-shaped, obovoid.
ramicaul, the "secondary stem," the aerial, leaf-bearing stem, applied only to pleurothallids.
repent, creeping, as applied to an elongated rhizome, as opposed to *caespitose*.
resupinate, the flower bearing the lip lowermost.
secund, of a raceme, with the flowers arranged in a one-sided rank.
spathulate, spoon-shaped, an ovate or obovate blade with a narrow stalk.
stem, a general term applied to the flower-stem (pedicel), inflorescence-stem (peduncle), or leaf-stem (petiole), or the "secondary stem" (ramicaul).
subacute, acute, the angle of the apex only slightly less than 90°.
suberect, almost erect.
successive, of a raceme, the flowers maturing in succession, as opposed to simultaneously.
sulcate, channeled, with a longitudinal groove.
Syn.:, synonym, an alternate (usually superseded) name.
tail, a cauda, the elongated, narrow apex of a flower part.
terete, cylindrical except for tapering ends, round in cross-section.
truncate, as though cut off transversely at the apex.

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